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ABSTRACT

These proceedings contain the texts of 29 papers presented at the ninth Annual Agricultural Education Research Meeting. During the five sessions of the conference, various areas of agricultural education were addressed, such as inservice education, job satisfaction and morale, teacher concerns, national issues, program improvement, preservice education, education and work transitions, instructional materials, and supervised occupational experience (SOE) programs. The following are typical individual papers delivered at each of the nine theme sessions of the meeting: "A Systematic Approach to Identifying Technical Inservice Needs of Teachers," by R. Kirby Barrick; "A Comparison of Perceived Job Satisfaction of Nonvocational and Vocational Teachers," by Joe W. Kotrlik, Steve Woodley, and Annette Sharp; "Perceptions of the Value of Extended Service in Horticulture," by Larae Watkins; "A National Survey of Student Misbehavior in Agricultural Education," by William G. Camp and James M. Garrison; "An Assessment of Vocational Agriculture Programs as Perceived by Female Students," by Marvin J. Cepica and Thomas A. Quarels; "Agricultural Education Preservice Instruction for Teaching Handicapped Students," by Anthony Mallilo; "Factors Relating to the Job Placement of Former Secondary and Postsecondary Vocational Education Students," by Floyd L. McKinney and Ida M. Halasz; "The Impact of Programatic SOE Instruction on the Self-Image of Students," by Carlton E. Morris and David L. Williams; and "Student Benefits from School Farm Activities as Perceived by Administrators and Instructors," by David A. McCarthy and David L. Williams. Discussant papers are also included. (MN)

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st. louis, missouri
3 december 1982

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FOREWORD

Research is essential to progress in any profession. This is the basic tenet under which professionals in Agricultural Education launched the regional research conferences and, more recently, the National Meeting.

The National Agricultural Education Research Meeting (NAERM) is unique in its field; no other vocational service area has such a comprehensive meeting dedicated to research and featuring the best studies from across the nation. The 1982 NAERM is the ninth in a distinguished series. Previous meetings were:

Number	Year	Location	Name and Institution of Chairperson
1	1974	New Orleans, LA	Hollie Thomas, Florida State
2	1975	Anaheim, CA	Hollie Thomas, Florida State
3	1976	Houston, TX	Glen Shinn, Mississippi State
4	1977	Atlantic City, NJ	William Richardson, Purdue
5	1978	Dallas, TX	Bennie Byler, Mississippi State
6	1979	Anaheim, CA	Ronald Brown, Mississippi State
7	1980	New Orelans, LA	L.H. Newcomb, Ohio State
8	1981	Atlanta, GA	Maynard Iverson, North Carolina State

The quality tone for the 1982 NAERM was set by those who conducted the previous meetings. I am grateful to a number of individuals who helped make this year's meeting successful: to Maynard Iverson, Chairperson, AVA Agricultural Education Division (AED) Research Committee, whose encouragement and assistance (especially in coordinating the design of the covers for the program and proceedings) were most valuable in organizing the 1982 NAERM; to Ben Byler, Past Chairperson, AVA/AED Research Committee, for his ideas and support in planning the meeting; to the members of the AVA/AED Research Committee for sponsoring and assisting in conducting the meeting; to Stephen Burke, Director of the Curriculum Materials Center, School of Education, N.C. State University, for designing the covers for the program and proceedings; to the individuals listed below who served as referees and whose work provided the basis for the objective selection of presenters:

Ronald Brown, Teacher Education, Mississippi State
Phillip Zurbrick, Teacher Education, University of Arizona
Rosco Vaughn, Supervision, New Mexico
Douglas Bishop, Teacher Education, Montana State
Larry Jewell, Teacher Education, North Carolina State
Gary Briers, Teacher Education, Texas A&M
Joseph Cvancara, Teacher Education, Washington State
Larry Case, Supervision, Missouri
Arthur Purcell, Teacher Education, North Carolina A&T
Robert Cox, National FFA Alumni Association

to Nevin Frantz, Director, Division of Vocational and Technical Education, Virginia Tech, for his support and encouragement in planning and conducting the conference; to a special anonymous friend who provided the Proceedings covers; to Paul Vaughn, Chairperson Elect, NAERM, who provided valuable ideas and reactions, and coordinated the assembling of the Proceedings; to the Conference Secretary Bill Camp who organized the conference registration; to Curtis Weston, Program Chairperson, AVA/AED, who coordinated the overall program planning; to the participants in the program--chairpersons, facilitators, discussants and speakers--whose efforts resulted in an excellent conference; and to all members of the profession who submitted proposals and permitted their work to be judged by their peers (28 of the 51 proposals submitted were selected for a 55% acceptance rate). I am especially grateful to my secretary, Sylvia Collins, for her patience and the excellent manner in which she handled the volume of work associated with the 1982 meeting.

I hope that the papers from the 1982 NAERM will prove useful to all who receive them and that all presentors will submit their work for possible publication in a journal. It is time to begin preparing for the 1983 NAERM and I hope that many of you will submit paper proposals for consideration. Any suggestions you may have for improvement of future meetings will be appreciated.

J. Dale Oliver
Chairperson, 1982 NAERM

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PROGRAM

NINTH ANNUAL
NATIONAL AGRICULTURAL EDUCATION RESEARCH MEETING

Cervantes Convention Center
St. Louis, Missouri
December 3, 1982

Conference Chairperson: J. Dale Oliver, Virginia Polytechnic Institute and State University
Chairperson Elect: Paul R. Vaughn, New Mexico State University
Conference Secretary: William G. Camp, Virginia Polytechnic Institute and State University

FIRST SESSION
Room 261

8:15 - 8:30 Topic: Orientation and Introductions

SECOND SESSION
Concurrent Session A
Room 261

8:30 - 10:00 Theme: Inservice Education

Chairperson: Carl E. Beeman, University of Florida

Facilitator: Thomas L. Grady, Louisiana State University

Discussant: Roy Dillon, University of Nebraska

Topic I: A Systematic Approach to Identifying Technical Inservice Needs of Teachers

R. Kirby Barrick, Ohio State University

Topic II: A Three Year Longitudinal Study of the Perceived Needs for Assistance as Ranked by Vocational Agriculture Instructors

Donald M. Claycomb, University of Missouri-Columbia
Gregory C. Petty, University of Tennessee-Knoxville

Topic III: The Effects of Inservice Instruction on the Implementation of the Illinois Core I Curriculum

Jerry D. Pepple, University of Illinois

Concurrent Session B
Room 262

8:30 - 10:00 Theme: Job Satisfaction and Morale

Chairperson: Elmer L. Cooper, University of Maryland

Facilitator: Dwight Paulette, Mississippi State University

Discussant: Larry E. Miller, Ohio State University

Topic I: Student Teacher Morale, Teacher Morale, and Job Satisfaction: A Longitudinal Study

Ben L. Byler & Linda F. Byler, Mississippi State University

Topic II: The Job Satisfaction of State Officials With Responsibilities for Programs of Vocational Education in Agriculture: A National Study

H. M. Snodgrass, Kentucky Department of Education

Topic III: A Comparison of Perceived Job Satisfaction of Nonvocational and Vocational Teachers

Joe W. Kotrlik, Louisiana State University
Steve Woodley, Louisiana State University
Annette Sharp, Baton Rouge Vocational-Technical School

Concurrent Session C
Room 263

8:30 - 10:00 Theme: Teacher Concerns

Chairperson: R. Dean Shippy, University of Delaware

Facilitator: Max B. McGhee, University of Florida

Discussant: James P. Key, Oklahoma State University

Topic I: Livestock Skills Taught in Vocational Agriculture Classes and Possessed by Current and Prospective Ohio Agricultural Production Teachers

Ed Osborne, University of Illinois

Topic II: Determination of the Level of Knowledge Possessed by Vocational Agriculture Teachers Concerning Classroom Liability

David Poor, Fred W. Reneau, James W. Legacy, & Thomas R. Stitt, Southern Illinois University

Topic III: Perceptions of the Value of Extended Service in Horticulture

Larae Watkins, Ohio State University

10:00 - 10:15 Refreshment Break

THIRD SESSION
Concurrent Session D
Room 261

10:15 - 11:45 Theme: National Issues

Chairperson: Curtis D. Norenberg, University of Minnesota

Facilitator: William B. Richardson, Purdue University

Discussant: Bob R. Stewart, University of Missouri

Topic I: A National Survey of Student Misbehavior in Agricultural Education

William G. Camp, Virginia Polytechnic Institute and State University
James M. Garrison, Carroll County Vocational High School, Carrollton, Georgia

Topic II: Positions Held by Teachers, Teacher Educators, and State Supervisors About Selected National Issues in Agricultural Education

H. Dean Sutphin, Cornell University
L. H. Newcomb, Ohio State University

Topic III: A Comparison of Agricultural Education Programs Located in Colleges of Agriculture With Those Located in Colleges of Education: An Empirical Study

Jerry L. Peters, Purdue University
Gary E. Moore, Louisiana State University

Concurrent Session E
Room 262

10:15 - 11:45 Theme: Improving Programs

Chairperson: James Leising, University of California-Davis

Facilitator: Susan S. Camp, Louisiana State University

Discussant: Robert A. Martin, Purdue University

Topic I: An Assessment of Vocational Agriculture Programs As Perceived by Female Students

Marvin J. Cepica, Texas Tech University
Thomas A. Quarels, Stephen F. Austin State University

Topic II: Teaching Vocational Agriculture as Perceived by Vocational Agriculture Students

Duane W. Sprouse & David L. Williams, Iowa State University

Topic III: Characteristics and Dimensions of Program Improvement in Agricultural Education

Wesley E. Budke, Ohio State University

Concurrent Session F
Room 263

10:15 - 11:45 Theme: Preservice Education

Chairperson: Richard Linhardt, University of Missouri

Facilitator: Wes Holley, Oklahoma State University

Discussant: Glen S. Shinn, Mississippi State University

Topic I: A Study to Determine the Grading Biases of Agricultural Education Teacher Educators and Other Vocational Teacher Educators

John H. Hillison, Virginia Polytechnic Institute and State University

Topic II: Agricultural Education Preservice Instruction for Teaching Handicapped Students

Anthony T. Mallilo, University of Rhode Island; Presented by Edgar P. Yoder, Pennsylvania State University

Topic III: Attention and Its Effects on Psychomotor Skill Development in Arc Welding

Philip Buriak, Ohio State University

FOURTH SESSION
Concurrent Session G
Room 261

1:00 - 2:30 Theme: Education/Work Transitions

Chairperson: Larry R. Jewell, North Carolina State University

Facilitator: John Parmley, Kansas State University

Discussant: Michael F. Burnett, Louisiana State University

Topic I: Factors Relating to the Job Placement of Former Secondary and Postsecondary Vocational Education Students

Floyd L. McKinney & Ida M. Halasz, Ohio State University

Topic II: Organizational Commitment of Cooperative Extension Service Agents

J. David McCracken, Keith L. Smith & Turiman B. Suandi, Ohio State University

Topic III: Assessing Trends in Educational and Occupational Aspirations of Students in Agriculture Majors

Blannie E. Bowen & Jasper S. Lee, Mississippi State University

Concurrent Session H
Room 262

1:00 - 2:30 Theme: Instructional Materials

Chairperson: James A. Knight, Jr., Ohio State University

Facilitator: Norman Rohrbach, University of Missouri

Discussant: Donald R. Herring, Texas A&M University

Topic I: Impact of a Supervised Occupational Experience Instructional Packet on Iowa Vocational Agriculture Students as Measured by a Work Values Inventory

Russell Haynes & David L. Williams, Iowa State University

Topic II: The Effects of Task Instruction Sheets on the Performance of Three Groups of Clientele Studying Sheep Production

James E. Diamond & James H. Mortensen, Pennsylvania State University

Topic III: Impact of Programatic SOE Instruction on the Self-Image of Students

Carlton E. Morris, Tuskegee Institute
David L. Williams, Iowa State University

Concurrent Session I
Room 263

1:00 - 2:30 Theme: SOEP

Chairperson: Jeffrey W. Moss, Texas A&M University

Facilitator: George Wardlow, Ohio State University

Discussant: Jimmy G. Cheek, University of Florida

Topic I: Factors Associated With the Status of Supervised Occupational Experience Programs in Utah Vocational Agriculture Programs

Gilbert A. Long & Kresha Dunham, Utah State University

Topic II: Attitudes of North Dakota School Administrators and Vocational Agriculture Instructors Toward Supervised Occupational Experience Programs

Donald Priebe, North Dakota State University
Robert Franzen, Parshall High School, Parshall, North Dakota
Ronald Willardsen, Napoleon High School, Napoleon, North Dakota

Topic III: Student Benefits from School Farm Activities as Perceived by Administrators and Instructors

David A. McCarthy, University of Minnesota Technical College
David L. Williams, Iowa State University

2:30 - 2:45 Refreshment Break

FIFTH SESSION
Room 261

2:45 - 3:45 Chairperson: Paul R. Vaughn, New Mexico State University

Facilitators: James J. Albracht, Kansas State University

John R. Crunkilton, Virginia Polytechnic Institute and State University

Topic I: Reporting Research in Agricultural Education: An Analysis of NAERM

Maynard J. Iverson, North Carolina State University

Topic II: What Vocational-Technical Agricultural Educators Believe: The National Opinion Poll

Jasper S. Lee, Mississippi State University

3:45 Announcements and Adjournment
Distribution of Proceedings to Registrants

DISCUSSANT PAPER
1982 NATIONAL AGRICULTURAL EDUCATION RESEARCH MEETING

Roy D. Dillon
Professor, Agricultural Education
University of Nebraska - Lincoln

Paper No. 1

A Systematic Approach To Identifying Technical In-Service Needs of Teachers

Author: R. Kirby Barrick

This paper utilized a very well overall organization and procedure to test the Borich model for identifying in-service needs. The problem and objectives are clearly stated. A review of literature was not evident; results of previous applications of the model might have strengthened the study. The Borich model uses a "what should be" as the program goal. How is that goal identified?

The method and procedures were quantified on a 5 point scale. The paper does not define the intermediate steps on the scale, to help insure interim step definition consistancy by respondants. The data analyses were appropriately chosen for the data collected, and were clearly presented. I would have liked to know what the specific topics were, i.e. how general or specific, and how homogeneous or heterogeneous the respondant group was, based on such factors as technical specialty area, and how these different taxonomy areas compared.

The conclusions related to the application of the model, and could have been more detailed in terms of the objectives and particular topic findings.

Overall, I found the study quite usable and well written. The author is to be commended for searching out a model to apply in the in-service arena. The proof of use of a good model is (1) what research has already been done?, and (2) what difference does the application of the model make in terms of what teachers actually change in their programs?

Paper No. 2

A Three Year Longitudinal Study Of The Perceived Needs For Assistance As Ranked By Vocational Agriculture Instructors

Authors: Donald M. Claycomb
Gregory C. Petty

This study is an example of a longitudinal study, more of which are needed in education. The introduction developed the problem situation, and cited previous research to support the need for the particular study. The objectives or hypothesis could have been more succinctly outlined for the reader, and the basis for the various levels of rank of 1-9 would have helped us understand the use of the scale somewhat better.

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The statistical tests used did fit the data collected, and the narrative findings were to the point. In the discussion section, the author related possible reasons for reported findings. This technique is commonly used, but a definite conclusion statement, followed by discussion statements may be easier for interpretation.

Paper No. 3

The Effects Of In-Service Instruction On The Implementation Of The Illinois Core I Curriculum

Author: Jerry D. Pepple

The researcher sought to measure, using a self-selected sample, the extent to which the Illinois Core I was being accepted by teachers. Previous research was considered as a basis for the problem, and a practical approach was planned. The author was careful to point out the limitations in the design of the study, and in the conclusions which he made. The 5 point scale rise might have been more definite if it would have related to percent of instructional time the Core was used.

The relative frequency figures help the reader understand the data. It would be interesting to know how such factors as years of experience, age and number of students per teacher influenced the outcomes.

Conclusion statements were well outlined, and matched the objectives of the study. A natural question one asks is "how much greater," or "how much higher" was the effects of the in-service instruction. Randomly selected samples could help answer these questions.

An excellent descriptive study to measure relative differences.

A SYSTEMATIC APPROACH TO IDENTIFYING TECHNICAL INSERVICE NEEDS OF TEACHERS

R. Kirby Barrick
Assistant Professor, Agricultural Education
The Ohio State University
Columbus, Ohio

Teachers of vocational agriculture have a continuing desire and need for inservice education, especially in their technical area. One of the functions of departments of agricultural education historically has been to identify the most relevant topics to provide teachers during various inservice education workshops throughout the year.

Identifying appropriate topics for inservice programs has been a perplexing problem. A variety of methods has been used to determine the needs of teachers and the importance of specific competencies. No method has been identified that combines importance of the subject and need for inservice education on the topic.

Until 1980, technical inservice workshops offered in Ohio were planned by an inservice committee of teacher educators and state supervisors of vocational agriculture. Topics were chosen from suggestions by selected teachers in the field based on their felt need and in talking with other teachers. Teacher educators and state supervisors in agricultural education also identified possible subject areas as a result of observations of vocational agriculture programs and teachers. As vocational agriculture in Ohio grew and expanded in number and types of teachers and programs, the need for a more systematic approach to planning inservice programs became apparent.

One possible alternative method of identifying appropriate inservice topics has been suggested by Borich (1980) as discussed in the May-June issue of the Journal of Teacher Education. Borich presented a model that could be employed in conducting follow-up studies of preservice and inservice training. The model is based upon the existence of a difference between "what is" and "what should be." Borich maintains that a training program can apply the model by defining "what is" as the measured behaviors, skills, and competencies of the trainee and "what should be" as the goals of the program. The difference between the two can be used as a measure of effectiveness.

The Borich Needs Assessment Model appears to have merit. The model allows the researcher to incorporate more than one basis for prioritizing suggested topics. The intent of this study was to assess and utilize the Borich model in planning inservice programs.

OBJECTIVES OF THE STUDY

The major purpose of this study was to utilize a system for identifying the technical inservice needs of teachers of vocational agriculture in Ohio. The specific objectives were as follows:

1. Identify the relative importance of specific technical agriculture topics as perceived by teachers.
2. Identify the relative knowledge of specific technical agriculture topics as perceived by teachers.

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3. Identify the relative ability to provide application of specific technical agriculture topics as perceived by teachers.
4. Determine the relationships among the three variables importance, knowledge, and application using the Borich Model.

METHODS AND PROCEDURES

The study was designed to utilize the Borich Needs Assessment Model (1980). Following the Borich model, these procedures were accomplished.

1. List Inservice Topics. A list of topics was derived from suggestions by teachers and others as a result of earlier technical workshops and surveys. Faculty members reviewed and revised the topics and finalized the list of 12 topics for the survey instrument, taking into consideration the objectives of the vocational agriculture program. Teachers could add topics to the list on the instrument, but those topics were not included in this analysis procedure. A different list of topics was used for each program area.
2. Survey Teachers. During the September, 1980 area vocational agriculture teacher meetings, teachers of vocational agriculture completed a survey instrument. Teachers were asked to rate importance, knowledge and application for each topic on the instrument for their taxonomy or program area. These terms were defined on the survey instrument as follows:
    Importance: Importance of the topic to your job function.
    Knowledge: Your knowledge of this topic (your ability to accurately recall or summarize the subject matter).
    Application: Your ability to provide or to organize hands-on experiences for students (to have them apply the knowledge).

The survey instrument had the following form, with one being low and five being high:

Topic	Importance	Knowledge	Application
1.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
2.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
3.	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

A total of 307 teachers participated in the study. This sample included all production agriculture and farm management teachers who were present at the September, 1980 area meeting, which was approximately 87 percent of all production agriculture and farm management instructors in Ohio.

3. Rank Topics. The topics were then ranked according to the mean ratings obtained from the survey. For each topic, two relative weight scores were determined using the following formulas:

Weighted Knowledge Score =
(Importance Mean-Knowledge Mean) Importance Mean
Weighted Application Score =
(Importance Mean-Application Mean) Importance Mean

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These relative weight scores were then ordered high to low. The topics with the greatest positive relative weight scores had the highest priority for being offered in a workshop for teachers.

4. Compare High Priority Topics with Training Program Content. High priority topics determined from the above procedures were reviewed by teacher educators in the department. Topics were regrouped by departments within the College of Agriculture and listed in rank order on the basis of relative weight scores. Highest ranking topics were also reviewed in terms of the need for credit courses to be made available during summer quarter.
5. Revise Program or Revise Topic. As a final step, topics were presented to representatives of various departments in the College. Topics were scrutinized in terms of instructional materials, potential enrollment, and time required to address the topic. Selected teachers of agriculture met with faculty of the departments to elaborate on the topics selected on the basis of the survey results.

Analysis

From the theory that served as a basis for the Borich model, it was assumed that there would be a significant difference among the rankings of the topics by importance scores, knowledge scores and application scores. If the assumption was correct, then the evidence would show that selecting topics for inservice programs on the basis of importance rankings or knowledge rankings or application rankings as perceived by vocational agriculture teachers would be less reliable than selecting topics based upon a combination of rankings.

The Friedman Two-Way Test of Analysis of Variance (Siegel, 1956) was applied using the rankings of the three variables (importance, knowledge, and application) for the 12 topics. Table 1 shows the results of the test. For all topics but one, there was a significant difference in the rankings of the topics.

Since the Friedman Test verified that there was a difference among the rankings of the inservice topics, the next step was to determine how the various rankings were related. Kendall tau coefficients were computed between Importance Mean and the following:

1.) Knowledge Mean
2.) Application Mean
3.) Weighted Knowledge Score
4.) Weighted Application Score

Table 2 shows the coefficients for the Kendall tau correlations.

An examination of the relationships among the rankings is an important part of the process. In analyzing the relationship between the importance score for each topic and the corresponding knowledge score, moderate relationships (Davis, 1971) exist ranging from Kendall tau coefficients of .18 to .33. In comparing importance score to application score, Kendall tau coefficients ranged from .23 to .44.

Following the Borich model, the difference between the importance score and the knowledge score was determined, and then multiplied by the importance score. The same procedure was followed, substituting application scores for knowledge scores. Each of these weighted scores was compared with importance score. Kendall tau coefficients ranged from .44 to .70 for the relationship between importance and weighted knowledge scores. Kendall tau coefficients ranged from .39 to .63 for the importance scores correlated with weighted application scores. Higher coefficients were expected for the correlations with weighted scores than with raw scores because of the effect of the multiplication factor of the importance score.

Although the correlations between importance scores and weighted scores were stronger, those scores do not exceed a moderate correlation range (Kendall tau = .4 to .7). This point indicates the value of the Borich model in determining inservice education needs for teachers of vocational agriculture. If the importance scores were correlated more strongly with the weighted knowledge scores or the weighted application scores, then a case could be built supporting the use of only importance scores in determining inservice needs. Since the correlations are moderate at best, then there is clearly significant value in utilizing importance, knowledge and application scores to determine needed topics for inservice education.

FINDINGS, CONCLUSIONS, RECOMMENDATIONS

Teachers in the study ranked the 12 inservice topics differently on the basis of importance, knowledge and application. With one exception, namely Topic 10, the rankings of the 12 topics varied significantly. The former procedure of using only the importance rankings or the knowledge rankings or the application rankings may not be accurate in many instances.

In addition to determining the rankings of inservice topics by teachers, the study also verified the procedure outlined by Borich. Since significant differences were found between rankings, it can be concluded that a combination of two or more rankings may be more accurate in determining inservice needs.

The results from using the Borich Model appear to be promising. Priorities can be based on more than a survey of desires or felt needs. The model incorporates importance of specific topics and the knowledge of the topics as perceived by the rater. The model provided defensible data in identifying important topics in which teachers need further knowledge.

REFERENCES

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Table 1
Relationship Between Ranking of Twelve
Inservice Education Topics Using
Friedman's Two-Way ANOVA[a]

	Mean Ranks			
Topic	Importance	Knowledge	Application	X^2
1	2.51	1.79	1.70	116.62
2	2.32	1.85	1.83	46.71
3	2.45	1.75	1.80	89.37
4	2.44	1.79	1.76	89.21
5	2.42	1.83	1.75	80.51
6	2.35	1.82	1.83	55.67
7	2.42	1.79	1.79	82.21
8	2.42	1.83	1.76	81.03
9	2.39	1.81	1.80	67.78
10	2.07	2.02	1.91	4.47[b]
11	2.35	1.82	1.83	54.95
12	2.51	1.70	1.79	119.64

[a] $p = .001$

[b] Not significant at the .001 level

Table 2
Relationships Between Ranking of Twelve Inservice Education Topics and Weighted Scores

	Kendall tau Coefficients[a]			
Topic	Importance with Knowledge	Importance with Application	Importance with Weighted Knowledge Score	Importance with Weighted Application Score
1	.02[b]	.23	.70	.63
2	.18	.34	.66	.56
3	.28	.41	.59	.48
4	.25	.38	.60	.51
5	.25	.39	.57	.51
6	.31	.38	.54	.41
7	.33	.41	.50	.40
8	.26	.32	.60	.52
9	.24	.44	.44	.40
10	.24	.38	.45	.39
11	.25	.32	.47	.45
12	.28	.36	.58	.44

[a] p = .001

[b] Not significant at .001 level

A THREE YEAR LONGITUDINAL STUDY OF THE PERCEIVED NEEDS FOR ASSISTANCE AS RANKED BY VOCATIONAL AGRICULTURE INSTRUCTORS

Donald M. Claycomb
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Gregory C. Petty
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Vocational-Technical Education
University of Tennessee-Knoxville

INTRODUCTION

Recent studies have been conducted in areas relating to time priorities, teacher dropout, and competencies needed by vocational agriculture teachers. Shippy (1981) found that vocational agriculture teachers and program supervisors in Delaware rated those competencies high in areas related to program management, planning content of lessons, grading systems, and maintaining working relationships. In Missouri, Goode and Stewart (1981) found that teachers gave high priorities to teaching day classes, activities of the Future Farmers of America, supervised occupational experience programs, planning instruction, and effective public relations. Hillison (1977) found that first year teachers were concerned about responsibilities such as completing state department reports, planning lessons, and ordering materials for their department.

General agreement is that the above areas are time consuming, which may have contributed to the fact that Moore and Camp (1979) found the number one reason teachers left the profession in Indiana to be long hours. Teacher dropout has been identified as a concern by a number of leaders in the profession. It has also been generally perceived that a very critical time in a teacher's career is the first two years.

Program planners have long been concerned with conducting inservice activities that would increase both the effectiveness and efficiency of all vocational agriculture teachers, including those who are beginning their careers. However, do we have a situation where "one size fits all" or do teachers at different stages in their careers perceive their needs for assistance differently? Longitudinal studies to ascertain if a teacher's perceived needs for assistance change from the time an individual graduates through the time an individual starts their second year of teaching were not found.

OBJECTIVE

The objective of this study was to ascertain whether or not the perceived needs for assistance are different at the following times during an individual's career as a vocational agriculture teacher: completion of the professional semester, early during the first year of teaching, and early during the second year of teaching.

METHODS AND PROCEDURES

A descriptive study was conducted using survey methodology to determine the needs for assistance as perceived by individuals at specific stages of their career as vocational agriculture teachers. The "Beginning Teachers' Needs Questionnaire" (BTNQ), a researcher-designed instrument, was developed as a result of a review of the literature and in consultation with a panel of experts composed of teacher educators at the University of Missouri-Columbia and all supervisors of vocational agriculture in the Missouri State Department of Elementary and Secondary Education.

The BTNQ was divided into nine areas as follows:

1. Technical Expertise--agricultural mechanics, agricultural management, plant science, animal science, agribusiness, horticulture, and vocational agriculture contests.
2. Human Relations--discipline, student rapport, fellow teachers, counselor, and community.
3. FFA--membership, activities, policies, and FFA contests.
4. Adult/Young Farmers--organizing, conducting, and maintaining.
5. Program Development and Planning--curriculum development, teaching calendar, long-range plan, advisory committee, needs identification, summer schedule, philosophy, and objectives.
6. Instruction--motivation, grading, references, materials, teaching aids, and resource development.
7. Determining Priorities and Managing Time--professional and personal.
8. Program Administration--local and state forms and reports, program expansion, public information, inventory management, security, budgeting, equipment and facility management, and placement and follow-up.
9. Supervised Occupational Experience Program--type of programs, requirements, visitation, placement, and sources.

Respondents were requested to rank the areas one through nine based on their perceived needs for assistance.

The BTNQ was administered to all students at the University of Missouri-Columbia completing the professional semester in Agricultural Education during the fall of 1979 and winter semester of 1980. The individuals accepting teaching positions were administered the same instrument in October of 1980. Those individuals accepting their second teaching contract were again administered the BTNQ in October of 1981. Control of extraneous variables due to environmental or social change over time are inherent when using a longitudinal study according to Kerlinger (1973). Kerlinger adds that longitudinal studies are well suited for making qualitive determinations about change occuring in a group of subjects over time.

Since the same subjects were surveyed three times during their careers, data were analyzed by a form of the rank-order analysis of variance, the Friedman Test (Kerlinger, 1973). This nonparametric analysis of variance concentrates on differences between the time intervals and ignores the differences between the subjects.

The formula given by Friedman is:

$$\chi_r^2 = \frac{12}{kn\ (n + 1)}\ ER^2 - 3k\ (n + 1)$$

where $\chi_r^2 = \chi^2$ (chi square)
k = number of rankings (3)
n = number of subjects being ranked (15)
R = the sum of the ranks in each column
ΣR^2 = the sum of these squared sums

A χ^2 table was utilized to check the value of each perceived need at a .05 level of significance. Where df = n (number of ranks) - 1 or 3 - 1 = 2, the .05 level for a value of 5.99 or greater. Values for all nine perceived needs were performed independently by reassigning relative ranking of each perceived need by time interval. The R of each need is shown in Table I.

Table I

The Sum of Ranks (R) for Time Intervals
and Chi Squares for the Nine
Perceived Needs

Needs	Seniors	Beginning Teachers	Teachers with One Year of Experience	Chi Square (X^2)
Technical Expertise	28	35	27	2.625
Human Relations	39	25	26	8.2274**
FFA	28.5	29.5	32	.5236
Adult/Young Farmers	22	36	32	7.0268**
Program Development and Planning	31.5	27.5	31	.7237
Instruction	36	27	27	3.6918
Determining Priorities and Managing Time	31	24.5	43.5	3.5251
Program Administration	21.5	30.5	38	9.1946**
Supervised Occupational Experience Program	35.5	29	25.5	3.5251

**Significant at .05 level.

RESULTS

Findings

Table I reports the findings of the study. It should be noted that these findings are based on statistical tests which are meant only to verify qualitative interpretations of the data. The subjects surveyed in this longitudinal study changed their rankings of perceived needs for assistance to some degree in all areas except FFA and Program Development and Planning. Technical expertise, instruction, determining priorities and managing time, and supervised occupational experience programs had higher chi square values yet the change was not significant. The chi square value of 8.2274 for human relations, 7.0268 for adult/young farmers, and 9.1946 for program administration were each found to be greater than the 5.99 value for level of significance at .05. The perceived need for assistance in human relations dramatically increased. The lower R's indicate higher rankings. The need for organizing, conducting, and maintaining adult/young farmers decreased over the years as did the need for assistance in program administration.

Discussion

Most of the changes in perceived needs appear to be logical; they are much of what would be expected, especially needs related to program administration. As one becomes more experienced with forms, reports, inventories, and general management, the easier the task becomes. It should be noted, however, that program administration was rated highest as measured by R for all seniors and lowest for all teachers with one year of experience. By far the most drastic change in needs occured with this area, as indicated by the high chi square.

Another interesting point is the marked change in ranking for human relations. It becomes clear that our more experienced teachers see a need for assistance in developing discipline, student rapport, community, and peer relations. Seniors do not perceive as great the need for human relations. It was ranked lowest of all by seniors but was second highest in priority for experienced teachers.

The organizing, conducting, and maintaining of adult/young farmer programs is seen as a high priority by seniors. However, little assistance is perceived as needed by teachers with one year of experience. Perhaps this is due to the emphasis placed on the importance of working with adult programs at the preservice level. Thus, the higher perceived need for assistance; however, many beginning teachers are not involved with adult programs and, therefore, may not have a need for assistance in this area.

Clearly, patterns of inservice assistance develop as the experience of agriculture teachers grows. These patterns change with the maturity and professional development of teachers. Program planners cannot assume that an outstanding preservice program is sufficient nor can they assume that the inservice needs for first year teachers are the same as the inservice needs of second year teachers.

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THE EFFECTS OF IN-SERVICE INSTRUCTION ON THE IMPLEMENTATION OF THE ILLINOIS CORE I CURRICULUM

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INTRODUCTION

Need for the Study

The process to use in disseminating new curriculum materials to teachers has long been an issue in education. Palmer (1971) recommended using in-service workshops as a means of introducing new curriculum materials to teachers. Blezek and Dillon (1980) suggested using in-service workshops as a means of increasing teacher utilization of new innovations in curriculum materials. However, Curry and Cheek (1981) concluded that there were no significant differences in the methods used to introduce new curriculum materials to teachers and their rate of utilization by agriculture teachers. The authors recommended using the least-cost method for disseminating new curriculum materials to teachers.

Fullan and Pomfret (1977) summarized pertinent curriculum development and implementation procedures through a synthesis of the germane literature. The major problem, as identified by Fullan and Pomfret, of getting new curriculum materials implemented, was the resistance to change from those most directly involved in implementing the new innovation. People do not easily alter established patterns of thinking and behavior. Therefore, the following processes were presented by Fullan and Pomfret as methods of enhancing the implementation rates. The developers should be explicit in communicating to the users of the innovation what changes are expected and the complexity of initiating and using the new innovation. This could be accomplished through the use of pre-service training, workshops, or in-service training to provide teachers moral and psychological support as they implement a new curriculum.

A second problem was that teachers' lack of time, materials, and other facilities can be barriers to implementation. Therefore, implementation could be increased by reducing the resource outlay for new materials. The new curriculum should make use, as much as possible, of resources teachers have easy access to and are familiar with.

A third problem was lack of teacher involvement and participation in the development of the new materials. Developers could enhance implementation by utilizing teachers in the actual writing and problem-solving sessions during the developmental phase of the project. This could be accomplished by using teachers to draft the curriculum materials, enlisting them to serve on project advisory committees, and have them field test and critique the curriculum materials. Developers could also promote peer acceptance and utilization by having local teachers assist in the dissemination phase of the project. (Fullan and Pomfret, 1977)

OBJECTIVES OF THE STUDY

This study (Pepple, 1982) was initiated, in part, to further examine the effects in-service workshops have on teacher implementation of new curriculum materials. The major objectives of this study were:

a. To determine the effects in-service workshop instruction has on use-rate of new curriculum materials.

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b. To determine the effects in-service workshop instruction has on influencing the impact new curriculum materials have on instructional programs.

c. To determine dissemination impact of using teachers as field test teachers and/or advisory committee members for curriculum development projects.

METHODS AND PROCEDURES

Identification of the Population and Sample

The population for this research study consisted of Illinois vocational agriculture teachers listed in the 1981-82 Annual Directory of Illinois Association of Vocational Agriculture Teachers (IAVAT). The sample was composed of those teachers who obtained a copy of the Illinois Rural Core I Materials.

Three methods were used to distribute the Core I materials. One method of obtaining the materials was through entrollment in a summer workshop graduate course offered during the summer session of 1981 under the title, "The Core Curriculum in Agricultural Occupations" at the University of Illinois, Urbana-Champaign campus. The course dealt with concepts of curriculum development, issues and problems in curriculum planning, and developing a revised local school curriculum based on the Core I materials. The class provided for an in-depth study of curriculum planning issues and practices.

An alternate means of acquiring the Core I materials was to attend one of the nineteen core curriculum workshops conducted throughout Illinois. Thirteen workshops were conducted in July and August and six were conducted in September and October of 1981. The workshops were approximately two hours in length and highlighted the current major problems and needs facing agricultural education, purposes and objectives of the core curriculum project, and an explanation of how the core content was organized within the units and problem areas. The core materials were distributed along with program planning guides and the teachers received suggested ideas on ways to use and integrate the core materials into their local programs.

A third method of obtaining the core curriculum materials was to purchase the materials directly from Vocational Agriculture Service, University of Illinois, Urbana-Champaign, without attending the core curriculum class or a workshop. Agriculture teachers attending the core curriculum class or a core workshop received a free set of the core materials for their schools. The core project provided, through an agreement with the Department of Adult, Vocational and Technical Education (DAVTE), Illinois State Board of Education, funds to print and distribute the core materials to local high schools offering reimbursed vocational agriculture programs. However, the teachers had to attend the core class or workshop to obtain a complimentary copy. Two hundred and sixty-two of the 390 agriculture departments listed in the Illinois Association of Vocational Agriculture Teachers (IAVAT) Annual Directory received the Rural Core I materials by this means. Another 9 teachers purchased the Rural Core I materials directly from Vocational Agriculture Service. The method used to secure a copy of the Core I materials was one of the independent variables for this study. Statistical differences in core use and effect were checked among those teachers attending two-hour workshops, those participating as field test teachers or advisory committee members, those attending a core curriculum graduate class and those receiving no in-service instruction on the core curriculum. All of the 270 teachers receiving a copy of the Core I Curriculum were used as the self-selected sample.

Fifteen teachers were contacted to serve as field-test teachers during Phase II of the Core I Project. Five other teachers were appointed to serve on the Core Curriculum Advisory Committee. Each of these groups had strong input regarding the format and content of the core curriculum. This group of teachers also attended and assisted with the two-hour workshops.

FINDINGS

The research instrument was developed to determine the degree of Core I use-rate and the effect core materials had on selected teaching situations. The evaluation was conducted at the end of the first semester, 1981-82. The form was mailed to teachers who had received the Core I materials and the returned forms (81.9%) were analyzed using SPSS software. The statistical measures utilized in this segment of the study were means, standard deviations, relative frequencies, and grouped responses to selected open-ended questions. The researcher selected these statistical measures due to the small, unequal sample sizes, and because it was not possible to randomly select the participants in each group.

The purpose of this section is to examine the relationship between in-service workshop instruction and the implementation of new curriculum materials. Tables 1 and 2 show the respondents' mean and standard deviation scores for the use-rate of core curriculum materials and their effect on teaching. A five-point scale (1 = not at all, 5 = to a very high degree) was used on the questionnaire to detect differences in the use of the Core I problem areas. Also, mean and standard deviation scores are reported for respondents serving as field-test teachers and core curriculum advisory committee members.

On the basis of the data in Table 1, it was noted that teachers who attended an intensive graduate class workshop used the Core I materials to a higher degree than teachers not attending workshops. The field test/advisory committee group and the two-hour in-service workshop group reported a higher mean use score and smaller standard deviation than the no-workshop group. However, the reported difference was not as large among these groups.

Table 2 shows the results of the statistical analyses which were conducted on respondents' mean and standard deviation scores to determine

TABLE 1

DEGREE CORE I MATERIALS WERE USED BY RESPONDENTS RECEIVING DIFFERENT DISSEMINATION STRATEGIES

Group	Frequency	Mean	S.D.
Workshop Graduate Course, 40 hrs.	16	3.80	.85
Field-test Teacher/ Advisory Committee Member	15	3.63	.41
In-service Workshop, 2 hrs.	145	3.19	.77
No-Workshop	9	2.88	1.12

TABLE 2

DEGREE OF EFFECT CORE I CURRICULUM HAD ON SELECTED TEACHING SITUATIONS BY RESPONDENTS RECEIVING DIFFERENT DISSEMINATION STRATEGIES

Group	Frequency	Mean	S.D.
Workshop Graduate Course, 40 hrs.	16	3.41	.64
Field-test Teacher/ Advisory Committee Member	15	3.29	.55
In-service Workshop, 2 hrs.	145	3.20	.66
No-Workshop	9	2.76	.97

if the effect the Core I curriculum had on respondents' teaching was meaningfully different between those attending in-service workshops and those not attending workshops. A five-point scale was used on the questionnaire to detect differences in effect when using the core materials.

Table 2 established a difference between graduate class workshop groups and those not attending workshops when comparing the mean and standard deviation scores on the effects Core I materials have on selected teaching situations. Again, the field-test/advisory committee group and the two-hour workshop group reported a higher mean effect score and smaller standard deviation than the no-workshop group.

To better understand and interpret these means and standard deviations relative frequencies were calculated for the reported use and effect of the core materials. These data are reported in Figures 1 and 2 (following). Relative frequencies were determined for the no-workshop group, the core graduate class group, and the field test/advisory committee group. Also, responses from these same three groups to two open-ended questions were grouped and visually inspected for trends in attitudes toward the use and effect of the core curriculum materials.

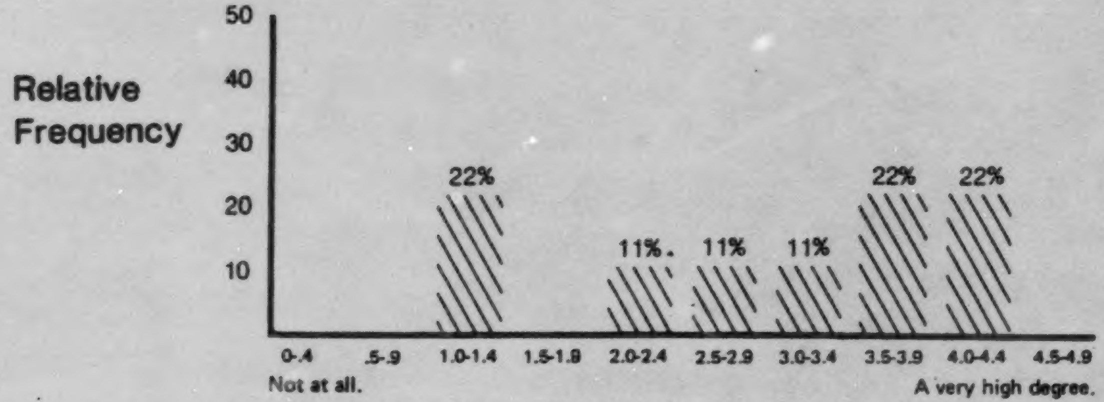
An inspection of Figure 1 shows that the core curriculum was used more by the field test/advisory committee group and used least by the no-workshop group. Also, the no-workshop group had a greater range in their scores than did the other two groups and the no-workshop group appears to be bimodal in their responses. This could suggest two different populations within this group. Figure 2 indicates that the core class group had a slightly more positive mean score than the field test/advisory committee group when evaluating the core curriculums' effect on selected teaching situations. However, both of these groups were meaningfully higher in their mean scores than was the no-workshop group.

To better understand the respondents attitude toward the core materials and to give them an opportunity to more fully explain their opinions the teachers were asked to respond to two open-ended questions. Selected representative responses to these questions have been arranged according to in-service group. When respondents were asked, "Do you think the core curriculum materials have enabled you to teach more effectively? Yes or no. Why is that?" All respondents in the core curriculum class group and in the field test/advisory committee group answered "yes." However, 22% of the no-workshop group answered "no." Sample responses from each group are as follows:

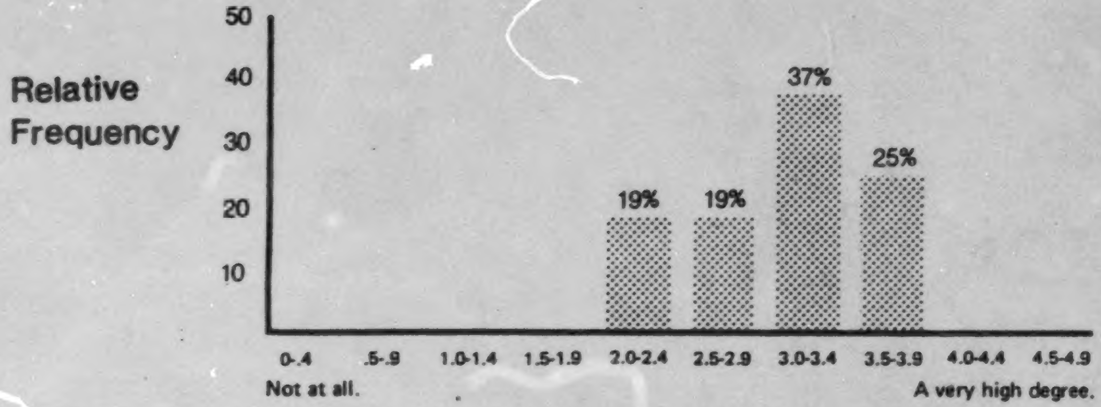
Typical Responses of Core Class Group

1. "Have taken many of the items I use and put them together in one place. Outlined and made more concise those objects sought in teaching a unit. Additional source material and resource list for each unit."

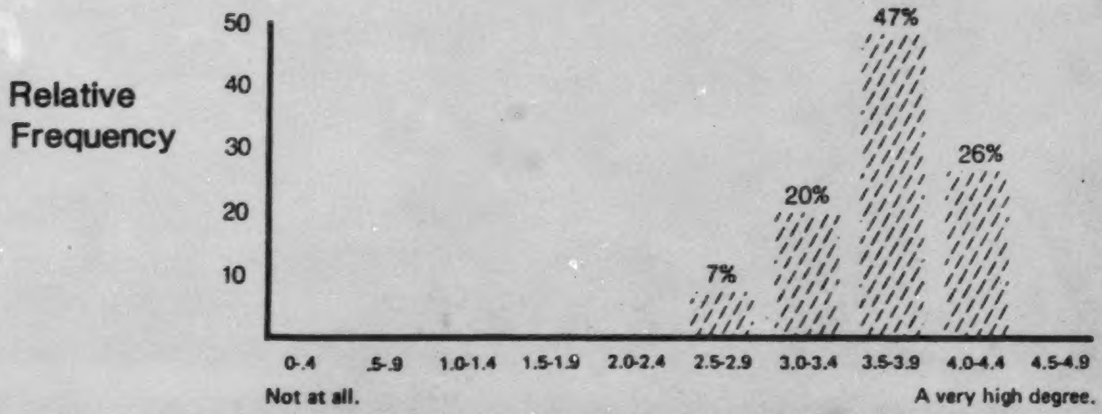
Relative Frequency for Use – Rate



Degree of Use – No Workshop Group



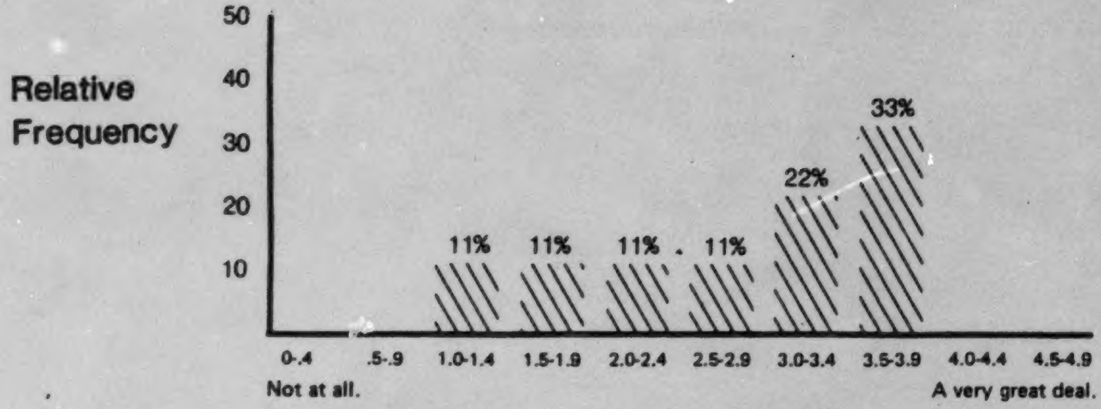
Degree of Use – Core Class Group



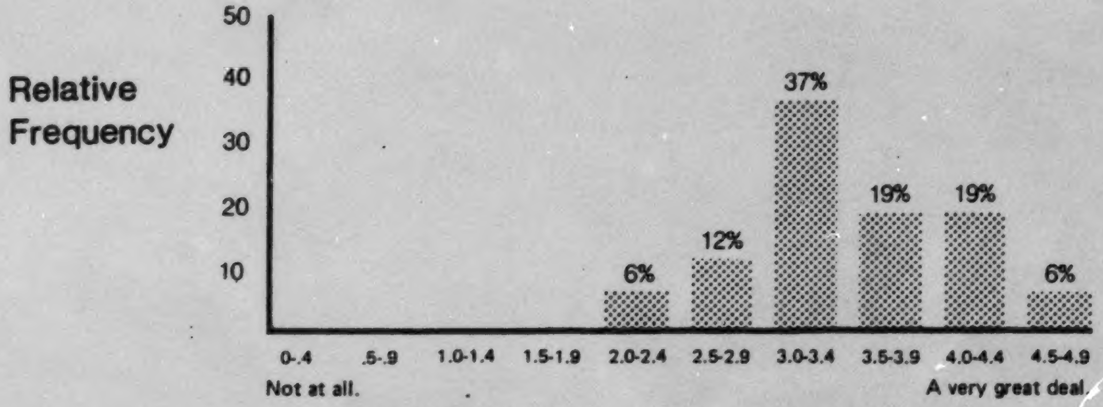
Degree of Use – Field Test Teachers Group

Figure 1

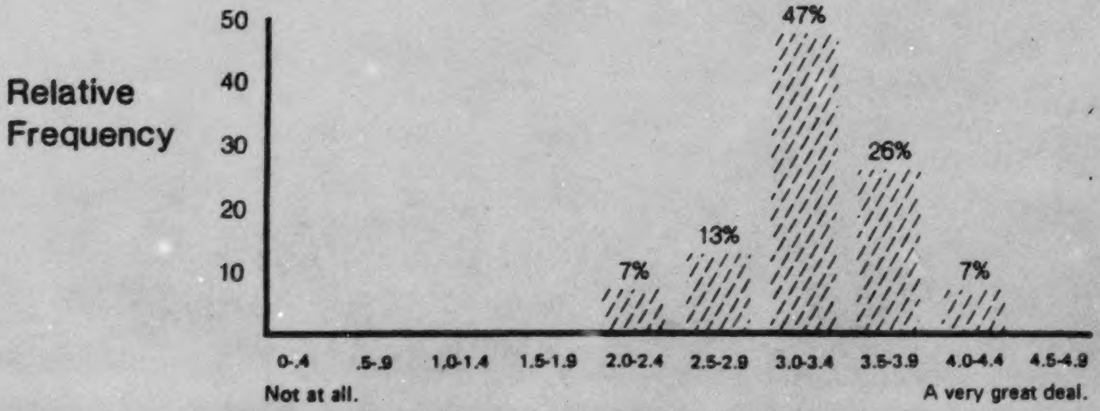
Relative Frequency for Effects on Teaching.



Degree of Effect – No Workshop Group



Degree of Effect – Core Class



Degree of Effect – Field Test Teachers Group

Figure 2

2. "Being a first year teacher and having little Ag. Production background (my speciality is in Horticulutre), I have found the core curriculum extremely helpful in that I have to teach a general ag. course."

3. "I believe it has greatly reduced my class preparation time. Especially in my Agriculture I class."

4. "Because it supplied a good list of resources which gave me more information about the subject and showed me different teaching methods for different problem areas."

Typical Responses of Advisory Member/Field Test Teacher Group

1. "Materials are designed similar to materials I use and teach with."

2. "The core material has enabled me to better organize my teaching methods and I spend less time in preparation for class."

3. "As a beginning instructor there have been many times when the core materials have given me ideas that I did not have the time to develop myself."

Typical Responses of No-Workshop Group

1. "I haven't taken the time to incorporate the materials into my lessons."

2. "Opens up some areas of instruction I didn't have materials for."

3. "I have not had time to implement them."

4. "It's concise and contains many of the areas I am covering."

Respondents were then asked, "In what ways, if any, has using the core curriculum been a problem for you?" When the data were analyzed by in-service group less than 40% of the core class group reported a problem with the core materials. However, 60% of the field test/advisory committee reported problems and almost 70% of the no-workshop group listed one or more problems with using the core curriculum materials. The following grouped responses are typical of each group's statements concerning problems encountered with the core curriculum.

Typical Responses of Core Class Group

1. "Some things are hard to reproduce"

2. "Lack of suggested reference material."

3. "Too bulky to carry home."

Typical Responses of Field Test/Advisory Committee Group

1. "Hard to correlate with old habits."

2. "Much of the core materials' use depends on a complete file of Vo-Ag service materials for reference."

3. "Finding time to review and adapt material to my situation."

4. "No problem, I am aware of how it should be used."

Typical Responses of No-Workshop Group

1. "Hard to organize into my old lessons."

2. "I have taught a long time and have my own materials prepared; I may gradually use some of the core materials."

3. "I have trouble working it into my teaching plans and also in trying to figure out the references."

4. "Hard to get used to its format."

In summary, there appeared to be a positive, practical benefit in providing instruction on newly developed core curriculum materials. Respondents who participated as field test teachers, advisory committee members, and in workshops recorded higher mean use-rate and a greater effect on their teaching than those respondents not having workshop instruction. Respondents who attended a graduate class on the Core Curriculum materials reported higher Core I mean use-rate score than both workshop and no-workshop groups. However, participants were not randomly selected to attend the core class, a workshop or purchase the materials. Therefore caution should be observed in drawing conclusions from these findings. Other factors, beyond those identified in this study, could have had an impact on the use and effectiveness of the core curriculum within each group.

CONCLUSIONS

Mean scores and relative frequencies were used to determine if the degree Core I materials were used was meaningfully different when comparing the method of obtaining the Core I materials. A scale of (1) not at all, (2) only a little, (3) to some degree, (4) to a high degree, and (5) to a very high degree, was used to detect differences along with responses to selected open-ended questions.

The results of the tests conducted on the data are summarized as follows:

1. The Core I materials were used to a higher degree by those respondents receiving intensive in-service workshop instruction than by those not receiving workshop instruction.

2. The Core I materials had a greater positive effect on respondents' teaching for the intensive workshop group than for the no-workshop group.

3. The Core I materials were used to a higher degree by the two-hour workshop group than by the no-workshop group.

4. The Core I materials had a greater positive influence on the respondents' teaching program for the two-hour in-service workshop group than for the no-workshop group.

5. The field test/advisory committee group reported a higher mean effects score than did the no-workshop group. The field test/advisory committee group also had a smaller standard deviation than the no-workshop group on both measures.

6. A positive relationship was found between in-service instruction and teacher use and acceptance of the new core curriculum materials. Therefore, it was concluded that the implementation of the core curriculum was enhanced by utilizing in-service workshops as a method of dissemination.

7. The more familiar teachers are with the purposes and format of the new curriculum materials, the more receptive they will be in implementing new materials into their programs.

RECOMMENDATIONS

Based on the findings of this study, evidence from past research, and the researcher's personal experience, the following recommendations are offered to aid in developing, implementing and evaluating new curriculum materials.

1. As a means of dissemination, in-service graduate courses or workshops should be utilized. These workshops should emphasize the purpose and organizational sequence of the new materials. This should make the new concepts less threatening to the teachers and promote a higher use rate and implementation.

2. Teacher educators and curriculum developers who wish to maximize the implementation of their efforts and impact what and how teachers teach should promote teacher involvement during the development of the materials. This could be accomplished by utilizing advisory groups, field test teachers, dissemination workshops, public funding of curriculum projects and follow-up activities.

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3. The format of the new materials must be such that teachers can realize a real savings or assistance in their planning time by using the new materials. The format must be usable and adaptable to many teaching styles and relevant to a variety of student occupational needs.

4. The conclusions of this study indicate that more research needs to be done on the influence of in-service workshops in promoting greater utilization and implementation of new curriculum materials and concepts into educational programs. The participants in this study were few in number and were not randomly selected in each group. Therefore, caution should be observed in drawing conclusions from these findings alone. Further studies need to be conducted which isolate and examine specific characteristics associated with use and non-use of new materials.

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CRITIQUE

Student Teacher Morale, Teacher Morale, and Job Satisfaction: A Longitudinal Study

by

Ben L. Byler and Linda F. Byler

The Job Satisfaction of State Officials with Responsibilities for Programs of Vocational Education in Agriculture

by

H. M. Snodgrass

A Comparison of Perceived Job Satisfaction of Academic and Vocational Teachers

by

Joe W. Kotrlik
Steve Woodley
Annette Sharp

Concurrent Session B, 8:30 - 10:00 a.m. December 3, 1982
National Agricultural Education Research Meeting
American Vocational Association
St. Louis, Missouri
December 3, 1982

Discussant
Larry E. Miller
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STUDENT TEACHER MORALE, TEACHER MORALE AND JOB SATISFACTION:

A LONGITUDINAL STUDY

by Ben L. and Linda F. Byler

These authors further what appears to be a programmatic effort into teacher morale with this longitudinal effort that compares students from the College of Education at Mississippi State University. This "in vogue" topic is further examined with this study. Our investigations of teachers need to consider more than just their technical competence if we are going to keep our most talented personnel in the profession.

The researchers specify sixteen null hypotheses. I would like to suggest that numbers 1, 2, 5, 6, 7, 14, 15 and 16 be reworded. A correlation simply addresses whether or not two variables vary together. The end sought by research that uses correlations is to explain and predict. The explanation of how two variables vary together is expressed by sign and magnitude. A correlation study is descriptive and does not need null hypotheses. When they are used, they test whether or not the sample studied is a chance deviation from a population whose true correlation (Rho) is zero between these variables: $H_o: \rho = 0$. Almost any two variables correlate one with the other, even spuriously. Therefore, a null hypothesis of "no correlation" is inappropriate. The direction (sign) and magnitude of the relationship is what is important. I would also prefer to see hypotheses 3, 4, 8, 9, 10, 11, 12 and 13 speak to ... "significant" difference .... Let us consider the four types of errors in survey research.

Sampling error is not appropriate to this study since the authors purport that they did a census of all graduates who student taught during the Fall of 1980 and had been a part of the original study; yet, they describe a sample of 126 graduates. How were they sampled? Was it not a study of the population?

Measurement error cannot be discussed because no evidence of the validity or reliability of the instrumentation is provided. Established instruments and measures are used, but these factors should be addressed by the authors.

Frame error cannot be adequately reviewed by the discussant because of inadequate information. This "sample" is described as consisting of graduates, but last year's report noted 155 subjects, but only 126 this time. What became of the other 29?

Nonresponse error can be noted as 29 percent. Results and conclusions should be confined to respondents, only. No efforts at sampling nonrespondents were reported.

Notes on "Findings, Conclusions, Recommendations"

1. "... efforts to influence morale should come early in the teacher education program." Data were not gathered throughout "the teacher education program" to substantiate this conclusion. Data are post-training.
2. I find no data to support Findings 3, 4, 5, 6, 7, 8, 10, 11, 12, 14 and 15.
3. In Table 3, were these data linear and homoscedastic? Although noted as significant at .01 level, with 124 degrees of freedom; the magnitude of the correlation would only have to be .273 to be significant. Using the correlation of .384, the coefficient of determination (r^2) is a .147. This tells us that 15% of the variability in the PTO is explainable by knowledge

The Job Satisfaction of State Officials with Responsibilities for Programs of Vocational Education in Agriculture

by H. M. Snodgrass

The introduction provides a succinct theoretical framework to develop the objectives of the study. Further rationale might have been provided applicable to this study in agricultural education by the work of Bowen (See the AATEA Journal Vol. XXII, No. 3, November 1981.) The author has clearly stated the objectives of the study which are very appropriate for a descriptive study of this nature. This was a descriptive study of a survey type using mailed questionnaires. The study is a census of all 209 officials.

Sampling error is not calculable since all subjects in the population were studied.

Frame error could be a problem if there was a change in personnel between the time the directory was prepared and the time that the questionnaires were mailed.

Nonresponse error was not assessed. Would dissatisfied officials be less likely to respond and thus responses were only gained from those satisfied, or vice versa? Findings would have to be confined to respondents, even if they were geographically representative.

Measurement error is a threat to the study since reliability, validity or utility of the instrumentation, even though well-known instruments are used, are not reported.

The conclusions are consistent with the findings of the study. The reader should note the magnitudes of the correlations and the regression coefficients. For example 76% of the variance in job satisfaction is still unexplained when five extrinsic facets are considered (p.8).

The author, being close to the study, should have been able to bring some recommendations or implications to the attention of the profession. How did this study contribute to theory and to practice? What has been contributed to current knowledge?

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A COMPARISON OF PERCEIVED JOB SATISFACTION OF NON-VOCATIONAL AND VOCATIONAL TEACHERS

by Joe U. Kotrlik, W. Steve Woodley and Annette Sharp

This study, like all research of a survey type, should be assessed in terms of threats to its validity. Threats to consider in survey research are sampling error, frame error, nonresponse error, and measurement error. The first three speak to the generalizability of the results (external validity) and the latter to whether or not the measurement was valid and reliable. Studies should also be examined in terms of whether or not they are theoretically sound and if they make a contribution to knowledge in the field. The ends sought by survey research are to explore and describe and this study attempted to describe the job satisfaction of selected Louisiana teachers.

Interest has focused on the nature of the attitudes and beliefs of teachers recently. Stress, burnout, morale and job satisfaction are topics that are "in vogue." The topic seems particularly appropriate since there appears to be a continuing shortage of vocational teachers in several areas. Further knowledge of these phenomena may help the profession to retain the most qualified personnel by a better understanding of what things keep them satisfied, i.e., in the profession.

Sampling error was addressed through random selection of parrishes. Ten parrishes were selected. The reader would have benefitted from knowledge of the size of the frame from which the ten were selected; 64 is stated under Limitations. The authors note that 500 teachers were mailed a questionnaire and comprised the sample. The sample was described as proportionate. Why were ten parrishes selected? What level of confidence was provided? Why were 500 teachers studied? What level of confidence did this number provide? Merely stating a limitation does not improve the quality of the research. Were there really only 1.223 times as many non-vocational teachers as there were vocational teachers? This proportion seems atypical of "public high schools" with which the discussant has been associated. Were the lists of teachers accurate and up-to-date? The absence of knowledge about the accuracy and completeness of the frame leaves unanswered the question of frame error. The authors describe "a framing error" as existing because of non-useable questionnaires. This seems to constitute, not a frame error, but the typical error resulting from the accepting sample (those questionnaires returned) and the data sample (those supplying useable information). The authors do not indicate why they were non-useable.

Nonresponse error was mentioned by the researchers, but the study did not resolve the possibility that respondents may have responded differently than nonrespondents. Nonresponse was consistent across both groups. The limitation about nonresponse reveals the knowledge of the authors of the threat to validity, but does not improve the quality of the research. Perhaps, the dollars that could have been saved by mailing fewer questionnaires could have been used for "double dipping" nonrespondents. The authors note that the questionnaire was shortened to encourage response and note that certain demographic variables were eliminated that might have been used to describe the results. This contention that short questionnaires produce higher response rates needs examination. Dillman[1] would not hesitate at

10 pages let alone 10 items.

Given these threats to external validity, Findings and Conclusions should have been worded carefully to note that the results were applicable to respondents supplying useable data.

Measurement error is a major problem in this study. No evidence is provided to the reader regarding the validity or reliability of the instrumentation. Did the instrument measure what it purported to measure (job satisfaction), all that it purported to measure, and just what it purported to measure, i.e., was it valid? Did it consistently, and with stability, measure whatever it measured, i.e., was it reliable? The standard error of the measurement should have been considered. If observed score equals true score minus error, all that was measured could have been error.

Statistical analysis The authors would do well to review the paper of Oliver and Hinkle and their discussion of comparison-wise error rates. The alpha level was set *a priori* at .05, but also reported at .10, which isn't exactly "playing by the rules." The alpha level has atrophied.

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[1] Dillman, Don A. Mail and Telephone Surveys, The Total Design Method. (New York: John Wiley and Sons) 1978.

STUDENT TEACHER MORALE, TEACHER MORALE, AND JOB SATISFACTION: A LONGITUDINAL STUDY

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INTRODUCTION/NEED FOR THE STUDY

A teacher's morale is influenced by other teachers, the administration, students and other persons in the environment. However, Hunter (1955) found that teachers can do much for themselves to maintain high morale through personal and professional growth, and continued cultural and educational advancement. Rabinowitz and Rosenbaum (1960) found a decline in scores on the Minnesota Teacher Attitude Inventory after teachers had completed three years of training. They hypothesized that this change was due to the realistic adaptations of the teacher to the demands of the classroom. Bentley and Rempel (1967) found that morale scores either dropped slightly or increased slightly during the first years of teaching and then, after nine years there was a sharp increase in morale.

Holeman (1963), and Byler and Byler (1981) reported that student teacher attitudes and actions tend to shift in the direction of the cooperating teacher. Byler and Byler (1981) also found that student teachers had a lower morale score after the student teaching experience.

Since the student teaching experience seems to have a strong influence on student teacher morale, it would appear advisable to investigate the characteristics of student teachers who entered the teaching profession following graduation, and those who entered a career other than teaching.

OBJECTIVES OF THE STUDY

Statement of the Problem

The purpose of this study was to determine if there are significant differences between student teachers who entered teaching and student teachers who did not enter teaching upon graduation for the following variables: student teacher morale, their current job satisfaction, the morale of their cooperating teachers, and selected personal and situation variables.

Hypotheses

The following null hypotheses were identified for this study and the .05 level of probability was established for the rejection of each hypothesis.

1. There will be no correlation between participants' morale following student teaching and their morale as first year teachers when measured by the total scores on the *Purdue Student Teacher Opinionaire* and total scores on the *Purdue Teacher Opinionaire*.

2. There will be no correlation between participants' morale following student teaching and their morale as first year teachers when measured by the nine factors on the *Purdue Student Teacher Opinionaire* and the ten factors on the *Purdue Teacher Opinionaire* (Tables 1 and 2).

3. There will be no difference in morale following student teaching between those participants who entered teaching and those who did not enter teaching when measured by the total scores on the *Purdue Student Teacher Opinionaire*.

4. There will be no difference in morale following student teaching between those participants who entered teaching and those who did not enter teaching when measured by the nine factors on the *Purdue Student Teacher Opinionaire*.

5. There will be no correlation between the National Teacher Examination scores and participants' morale as first year teachers when measured by the total scores on the National Teacher Examination and the total scores on the *Purdue Teacher Opinionaire*.

6. There will be no correlation between participants' cumulative quality point average and their morale as first year teachers when measured by the total scores on the *Purdue Teacher Opinionaire*.

7. There will be no correlation between participants' job satisfaction and their morale as first year teachers when measured by the total scores on the *Job Satisfaction Inventory* and the total scores on the *Purdue Teacher Opinionaire*.

8. There will be no difference in job satisfaction between participants who entered teaching and those who did not enter teaching when measured by the total scores on the *Job Satisfaction Inventory*.

9. There will be no difference in job satisfaction between participants who entered teaching and those who did not enter teaching when measured by individual items on the *Job Satisfaction Inventory*.

10. There will be no difference in morale between vocational and non-vocational teachers when measured by the total scores on the *Purdue Teacher Opinionaire*.

11. There will be no difference in morale between vocational and non-vocational teachers when measured by the ten factors on the *Purdue Teacher Opinionaire*.

12. There will be no difference in job satisfaction between vocational and non-vocational teachers when measured by the total scores on the *Job Satisfaction Inventory*.

Table 1

Factors and Items Included in Each Factor on the Purdue Student Teacher Opinionaire

Factor	Item Number	Possible Score
1. Rapport with supervising teacher	5,6,18,34,38,52,55,58	32
2. Rapport with principal	1,9,22,35,42,47,56,59	32
3. Rapport with university supervisor	7,17,28,30,46,54,60	28
4. Teaching as a profession	13,15,19,20,23,26,37	28
5. School facilities and services	3,32,48,50,53	20
6. Professional preparation	12,24,39,40,43,44	24
7. Rapport with students	2,11,16,27,29,45,49,51	32
8. Rapport with other teachers	10,21,25,31,33,57	24
9. Student teacher load	4,8,14,41,36	20
	Total	240

Table 2

Factors and Items Included in Each Factor on the Purdue Teacher Opinionaire

Factor	Item Number	Possible Score
1. Teacher rapport with principal	2,3,5,7,12,33,38,41,43,44,61,62,69,70,72,73,74,92,93,95	80
2. Satisfaction with teaching	19,24,26,27,29,30,46,47,50,51,56,58,60,76,78,82,83,86,89,100	80
3. Rapport among teachers	18,22,23,28,48,52,53,54,55,77,80,84,87,90	56
4. Teacher salary	4,9,32,36,39,65,75	28
5. Teacher load	1,6,8,10,11,14,31,34,40,42,45	44
6. Curriculum issues	17,20,25,79,88	20
7. Teacher status	13,15,35,37,63,64,68,71	32
8. Community support of education	66,67,94,96,97	20
9. School facilities and services	16,21,49,57,59	20
10. Community pressures	81,85,91,98,99	20
	Total	400

13. There will be no difference in student teacher morale, cumulative quality point average, National Teacher Examination scores, and job satisfaction between participants who entered teaching and those who did not enter teaching.

14. There will be no correlation among participants' student teacher morale, cumulative quality point average, National Teacher Examination scores, and their morale as first year teachers.

15. There will be no correlation among student teacher morale, cumulative quality point average, National Teacher Examination scores, and total scores on the Job Satisfaction Inventory.

16. There will be no correlation between the morale of first year teachers and the morale of their cooperating teachers when measured by the ten factors on the Purdue Teacher Opinionaire.

METHODS AND PROCEDURES

Data were collected from all graduates of the College of Education who student taught during the Fall of 1980, at Mississippi State University, who had participated in the original study. The sample consisted of 126 graduates. A total usable response rate of 71 percent was obtained.

The Purdue Teacher Opinionaire (PTO) and the Job Satisfaction Inventory (JSI) were mailed to each graduate. The NTE scores and QPA for each graduate was obtained from records at Mississippi State University. Scores on the Purdue Student Teacher (PSTO) and cooperating teachers' scores on the Purdue Teacher Opinionaire (PTO) were already on computer file at Mississippi State University.

FINDINGS, CONCLUSIONS, RECOMMENDATIONS

Statistical analysis of the data to test the hypotheses consisted of the use of: correlated t, independent t, Pearson product-moment correlation, canonical correlation, and discriminant analysis.

1. There was a significant correlation between student teachers' total morale scores after the student teaching experience and their total morale scores as first year teachers. Educators need to be aware that morale is influenced by the student teaching experience (Byler and Byler, 1981) and is correlated to their morale as first year teachers. Any efforts to influence morale should come early in the teacher education program (Table 3).

2. There was not a significant canonical relationship between the factor scores of student teacher morale on the PSTO after student teaching and factor morale scores on the PTO as first year teachers.

3. There was not a significant difference in student teacher morale between students who entered teaching and those who did not enter teaching as measured by their total morale scores after student teaching.

Table 3

Correlation Between the Total Posttest Scores on the Purdue Student Teacher Opinionaire and the Total Scores on the Purdue Teacher Opinionaire for First Year Teachers

Variable	Mean	Standard Deviation	Correlation Coefficient
Purdue Student Teacher Posttest	198.827	20.838	
Purdue Teacher Opinionaire	299.615	45.959	.384**
N=52			

**Significant at .01 level.

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4. Students who entered teaching had significantly higher morale scores on the PSTO factor dealing with "student teacher load" than those who did not enter teaching. Teacher educators and cooperating teachers should attempt to provide student teachers a realistic view of the workload expected of a classroom teacher.

5. There was a significant correlation between the composite scores on the NTE and total scores on the PTO as first year teachers.

6. There was a significant relationship between participants' QPA and their morale scores as first year teachers. It appears that participants who performed well academically had higher morale scores as teachers. Perhaps teacher educators whould encourage the more academically talented students to enter teaching and counsel with students who have low academic achievement.

7. There was a significant relationship between job satisfaction and morale scores for first year teachers. Inservice education programs should seek ways to maintain high morale of first year teachers and identify those factors contributing to low morale which might be alleviated.

8. Participants who entered teaching had significantly higher job satisfaction scores than those who did not enter teaching. A greater effort should be made to help students obtain teaching positions upon graduation. If positions are limited, students should be cognizant of the situation early in their college career.

9. Participants who entered teaching had significantly more positive scores than participants who did not enter teaching on the following JSI items: "My job is usually interesting enough to keep me from betting bored," "I am often bored with my job," "I definitely dislike my work," "Each day of work seems like it will never end," "My job is pretty uninteresting," and "I am disappointed that I ever took this job." Inservice activities should be provided to encourage continued high job satisfaction (Table 4).

10. There was no significant difference in total morale scores between first year vocational and first year non-vocational teachers.

11. There was no significant difference in factor morale scores between first year vocational and non-vocational teachers.

12. There was no significant difference in job satisfaction scores between first year vocational and non-vocational teachers.

13. A discriminant analysis was used to statistically distinguish between students who entered teaching and those who did not enter teaching for the following variables: QPA, NTE, student teacher morale, and job satisfaction. Although the means were higher for the group that entered teaching for all four variables, the analysis did not reveal a statistically significant distinction between the two groups. Since there is such a slight difference in the scores for those who obtained teaching positions and those who did not, teacher educators should inform students about the importance of academic performance and professionalism.

Table 4

Means, Standard Deviations, and t Values for the Job Satisfaction Questionnaire Items Between College of Education Graduates Who Entered Teaching and Those Who did not Enter Teaching

	Teaching (56)		Not Teaching (39)		
Job Satisfaction Questionnaire Items:	$\bar{X}$	S.D.	$\bar{X}$	S.D.	t
1. My job is like a hobby to me	3.07	1.13	2.69	1.17	1.59
2. My job is usually interesting enough to keep me from getting bored	4.20	.98	3.67	1.26	2.30*
3. More interested in my job than my friends	3.66	.86	3.31	1.03	1.82
4. I consider my job pleasant	4.29	1.02	4.06	.90	1.28
5. I enjoy my work more than my leisure time	2.16	.86	2.26	1.09	-.49
6. I am not often bored with my job	4.11	1.09	3.59	1.21	2.18*
7. I feel fairly well satisfied with my job	3.68	1.16	3.56	1.25	.46
8. Most of the times I do not force myself to go to work	4.00	1.01	3.85	.99	.74
9. I am satisfied with my job	3.98	1.04	3.67	1.11	1.42
10. I feel that my job is more interesting than others I could get	3.38	1.34	3.67	.98	-1.16
11. I definitely like my work	4.50	.83	4.03	1.18	2.02*
12. I am happier in my work than most people	3.59	.91	3.44	1.05	.76
13. Most days I am enthusiastic about my work	3.80	.84	3.59	1.09	1.08
14. Don't look forward to the end of the days work	4.00	.76	3.51	.97	2.74**
15. Like my job better than the average worker	3.66	.72	3.46	.99	1.13
16. My job is pretty interesting	4.28	.80	3.82	1.14	2.33*
17. I find real enjoyment in work	3.89	.93	3.51	1.23	1.71
18. I am not disappointed that I ever took this job					

* Significant at the .05 level.

** Significant at the .01 level.

14. There was not a significant relationship among participants' student teacher morale, QPA, and the professional area and common area scores on the NTE and the total morale scores on the PTO as first year teachers.

15. There was not a significant relationship among student teacher morale, QPA, and the professional area and common area scores on the NTE and the total scores on the JSI.

16. There was a significant canonical correlation between the morale of first year teachers and the morale of their cooperating teachers for all ten factors on the PTO. Therefore, it is imperative that cooperating teachers be selected who can provide a high quality student teaching experience. Teacher educators should also provide inservice training for cooperating teachers if they are to fulfill this important role (Table 5).

The findings of this study revealed a significant relationship between participants' morale as student teachers and their morale as first year teachers. There was also a significant relationship between participants' student teacher morale and their cooperating teachers' morale. The participants who entered teaching had more positive scores on the Job Satisfaction Inventory, and these scores were significantly related to their morale as first year teachers. Consequently, there appears to be an interrelationship among student teacher morale, cooperating teacher morale, first year teacher morale and job satisfaction. Teacher educators should consider these relationships as they plan and implement teacher education programs, select and train cooperating teachers, and as they provide inservice education programs for first year teachers.

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Table 5

Canonical Correlation Between First Year Teachers and Their Cooperating Teachers on the Factors of the Purdue Teacher Opinionaire

Factor	Canonical Roots I	II	III	IV	V	VI	VII	VIII	IX	X
First Year Teachers:										
1. Rapport with Principal	(.78)	(-1.90)	(1.37)	(-2.11)	(- .69)	(- .66)	(2.00)	(3.53)	(-1.88)	(-4.18)
2. Satisfaction with Teaching	(2.67)	(-2.30)	(- .61)	(1.67)	(3.30)	(4.91)	(-3.65)	(1.10)	(2.46)	(.63)
3. Rapport Among Teachers	(-2.46)	(2.75)	(- .66)	(-3.96)	(3.81)	(-3.12)	(-1.11)	(- .78)	(1.47)	(3.67)
4. Teacher Salary	- .20	(-1.51)	(-1.68)	(.50)	(- .34)	(1.15)	(2.27)	(-2.53)	(-2.57)	(1.29)
5. Teacher Load	(-1.98)	(-1.09)	(3.02)	(2.18)	(-1.15)	(.70)	.29	(-1.83)	(1.35)	(.45)
6. Curriculum Issues	(-2.57)	(- .44)	(-2.18)	(1.20)	(-2.75)	(1.24)	(-2.36)	(1.02)	.07	(1.83)
7. Teacher Status	(-1.18)	(1.52)	(- .82)	(2.01)	.01	(-2.99)	(2.52)	(2.56)	(1.44)	(-1.09)
8. Community Support	(1.70)	(-1.17)	(.71)	(- .31	(-1.70)	(- .44)	(-1.04)	(-4.33)	(-7.14)	(-4.34)
9. Facilities and Services	(1.01)	(2.09)	(.56)	(- .97)	(.38)	(2.14)	(1.01)	- .16	(1.08)	- .17
10. Community Pressures	(2.61)	(1.77)	(.42)	(- .38)	(-1.23)	(-2.97)	(.44)	(1.64)	(-10.20)	(2.50)
Cooperating Teachers:										
1. Rapport with Principal	- .29	(- .65)	(.45)	(- .68)	- .20	- .18	(.49)	(.84)	- .29	(- .49)
2. Satisfaction with Teaching	(.67)	(- .56)	- .24	(.41)	(.31)	(.71)	(- .42)	.19	.25	(.89)
3. Rapport Among Teachers	(- .59)	(.61)	- .19	(- .83)	(.62)	(- .65)	- .13	- .11	.16	(.65)
4. Teacher Salary	- .07	(- .51)	(- .54)	.16	- .11	(.31)	(.55)	(- .59)	(- .39)	.19
5. Teacher Load	(- .60)	(- .32)	(.81)	(.59)	(- .30)	.15	.07	(- .36)	.17	.12
6. Curriculum Issues	(- .94)	- .13	(- .66)	(.36)	(- .70)	(.37)	(- .59)	.23	.01	.00
7. Teacher Status	(- .48)	(.58)	- .22	(.63)	.15	(- .79)	(.56)	(.61)	.22	(- .59)
8. Community Support	(.57)	(- .36)	.21	- .09	(- .43)	- .11	- .24	(- .94)	(1.00)	(- .49)
9. Facilities and Services	(.48)	(.90)	.21	(- .39)	.10	(.74)	(.33)	- .04	.21	.11
10. Community Pressures	(.62)	(.37)	.05	- .06	(- .30)	(- .56)	.11	.26	(- .99)	(.42)
Roots (R^2)	.7756	.6684	.5998	.5890	.4646	.4427	.3379	.3206	.1339	.0755
R	.8807	.8176	.7745	.7675	.6816	.6654	.5813	.5663	.3659	.2748
Chi Square	441.15	341.78	268.37	207.47	148.33	106.79	67.92	40.49	14.78	5.22
df	100	81	64	49	36	25	16	9	4	1
Probability	.001	.001	.001	.001	.001	.001	.001	.001	.005	.002

THE JOB SATISFACTION OF STATE OFFICIALS WITH RESPONSIBILITIES FOR PROGRAMS OF VOCATIONAL EDUCATION IN AGRICULTURE: A NATIONAL STUDY

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THE JOB SATISFACTION OF STATE OFFICIALS WITH RESPONSIBILITIES FOR PROGRAMS OF VOCATIONAL EDUCATION IN AGRICULTURE: A NATIONAL STUDY

INTRODUCTION

Occupational psychologists and sociologists have for many years been interested in the relationship that work has to the individual's physical and psychological well-being. This interest has been framed within the context that work is an integral part of life. Bryant (1972), an occupational sociologist, expressed this relationship when he stated:

> Work involves not only a set of technological and economic relations; it involves also a set of social relations. The character of these social relations, other things being equal, is a determinant of the employment into which the worker will enter and in which he will choose to remain (p. 14).

In addition to the social function which provides a means of establishing and maintaining relationships with others, work is also a means of acquiring the basic needs such as food, shelter, and clothing. Work also provides an opportunity for power, self-esteem, and self-actualization.

Mills (1977:215) emphasized the importance of work to the individual when he stated, " . . . the worker's feelings about (work) and his experiences of it influence his satisfactions and frustrations, the whole tone of his life." Studies by Roe (1956) and Super (1957) suggest that an individual's satisfactions, aspirations, and goals are influenced by and often determined by their occupational placement since a person's occupation constitutes a mode of life as well as a means of fulfilling physical and psychological needs. The fact that work does play such a major role in our lives has stimulated researchers and practitioners alike to become concerned with the workers' feelings toward the work itself and the work environment as components of a construct that is referred to as job satisfaction.

Many job satisfaction studies have resulted in the formulation of various job satisfaction theories and cause-effect relationships. These theories include the traditional bi-polar continuum of job satisfaction theory and the need fulfillment theories of Maslow (1943) and Porter (1961). Another theory that is based primarily on the need fulfillment approach and one that has been the focus of much controversy is the Motivator-Hygiene Theory proposed by Herzberg, Mausner, and Synderman (1959).

Brayfield and Rothe (1951) studied job satisfaction as an overall measure of the workers' attitude toward the work situation. A later approach to the study of job satisfaction was an attempt to establish relationships between selected personal and situational characteristics and job satisfaction (Katz, 1978). With this approach to the study of job satisfaction came an emphasis on investigating both those facets of the work that were considered to be intrinsic facets or motivators (e.g. achievement, advancement, recognition, responsibility, and the work itself) and those facets of the work that were considered to be extrinsic facets or hygienes (e.g. interpersonal relations, policy and administration, salary, supervision and working conditions) (Centers and Bugental, 1966).

The need for investigating the construct of job satisfaction as it relates to state officials with responsibilities for programs of vocational education in agriculture arises from several situations which exist within the occupation. The fact that supervisors of agricultural education are employed by state departments of education places the occupation within the confines of an organizational structure which can be characterized as a bureaucracy. Therefore, within the work environment four primary characteristics exist: (1) high specialization, (2) rigid hierarchy of authority, (3) elaborate rules and controls, and (4) impersonality (Bryant, 1972). Changes in organizational structures of state departments of education have resulted in changes in the role responsibilities of educational program supervisors (Campbell, Stoufe and Layton, 1967).

Confusion also exist regarding the role of the supervisor when working with local school district administrators and teachers (Gwynn, 1961). There has been an increased demand upon the supervisors' time and as a result an increased work load. This situation can be illustrated by the fact that the number of agricultural education supervisors employed by state departments of education in the United States decreased 25 percent from 1970 to 1980. During this same time period the number of secondary school agricultural education teachers increased by more than 21 percent (Crunkilton, 1980).

Despite the fact that studies conducted with management supervisory and blue-collar personnel in business and industry have demonstrated that selected personal and situational characteristics are related to job satisfaction, little systematic study has been conducted with supervisory personnel in the field of education. No studies were located which investigated the job satisfaction of supervisors of vocational programs in agricultural education.

OBJECTIVES

The purpose of the study was to develop a descriptive profile of incumbent state officials with responsibilities for vocational programs in agricultural education, to determine the job facets within the occupation which contribute to job satisfaction and dissatisfaction, and to establish the relationship of selected personal and situational characteristics to the level of job satisfaction.

This study was designed to answer the following research questions:

1. What are the characteristics of state officials with responsibilities for programs of vocational education in agriculture with respect to age, marital status,

years of education, department organizational structure, total years teaching experience, total years of experience as a supervisor, number of teachers supervised and salary?

2. What relationships exist between selected personal characteristics (age, marital status, years of education, total years teaching experience, total years of experience as a supervisor) and level of job satisfaction?

3. What relationships exist between selected situational characteristics (department organizational structure, number of teachers supervised, and salary) and level of job satisfaction?

4. What relationships exist between selected intrinsic job satisfier facets (achievement, advancement, recognition, responsibility, and the work itself) and the job satisfaction of state officials with responsibilities for programs of vocational education in agriculture?

5. What relationships exist between selected extrinsic job dissatisfier facets (interpersonal relations, policy and administration, salary, supervision, and working conditions) and the job satisfaction of state officials with responsibilities for vocational programs in agricultural education?

METHODOLOGY

The population for this study consisted of 209 state officials with responsibilities for programs of vocational education in agriculture employed by 51 state departments of education within the continental United States and Puerto Rico. These 209 individuals represented the total population as identified in the 1980 Directory of State Officials with Responsibilities for Programs of Vocational Education in Agriculture.

The population included those officials who had the assigned titles of: state director, state supervisor, program manager, assistant supervisors, regional supervisor, district supervisor, specialist, consultant, associate, and executive secretary.

The data for this investigation were collected utilizing the mail survey technique. A three-part instrument was used to collect the data. Part I of the instrument consisted of a Personal/Situational Data Form which solicited information relative to selected personal and situational characteristics of the participants. Part II of the instrument consisted of the "Minnesota Satisfaction Questionnaire" (short-form).

The "Minnesota Satisfaction Questionnaire" developed by Weiss, Dawis, England, and Lofquist (1967) was used to measure the job satisfaction level of two dimensions of the job situation, the intrinsic dimension and the extrinsic dimension. The questionnaire was divided into twenty scales each of which represent either an intrinsic facet of the job situation or an extrinsic facet of the job situation. Five response alternatives were presented for each facet ranging from not satisfied to extremely satisfied. Part III of the instrument consisted of the "Index of Job Satisfaction." The "Index of Job Satisfaction" developed by Brayfield and Rothe (1951) was used to measure "overall" job satisfaction which takes into consideration all aspects of the job situation. The instrument uses a Likert-type scale with possible responses ranging from strongly agree to strongly disagree.

Two hundred nine state officials were mailed questionnaires along with a cover letter, a supporting letter, and a self-addressed stamped envelope. One hundred seventy-nine questionnaires were returned representing an 86 percent response rate. All returned questionnaires were usable for analysis purposes.

Since the study was descriptive in nature and included the total population, the analysis of the data was limited to descriptive statistical methods. The statistical methods used in analyzing the data included frequencies, means, ranges and multiple linear regression.

FINDINGS

The 86 percent response rate included relatively equal distribution across all four national administrative regions of the National Association of Supervisors of Agricultural Education. Table 1 illustrates the frequency and percentage of returns from each of the four regions.

Personal And Situational Characteristics

The mean age of all respondents was 45.8 years, with a range from 23 years of age to 65 years. The modal age for this population was 32. Eighty-nine percent of the respondents were married and had children, 5 percent were married but did not have children and 4 percent were single. The mean number of years of post high school education for all respondents was 5.7, with a range from 1 to 9 years. Ninety-one percent of the respondents had 5 years or more of post high school education. One hundred thirty-two of the respondents had masters degrees. Eleven had specialist classification and 16 had earned doctor's degrees. Thirty-one percent of the respondents worked from a regional location with either regional or statewide responsibilities, while 69 percent were in a centralized location. The mean number of years of teaching experience was 11 years, with a range from 0 to 31 years. Forty-eight percent of the respondents had less than 10 years of teaching experience. The mean number of years of supervisory experience was 9.8 with a range from 1 to 38 years. The respondents had been in their present positions for an average of 8.3 years, with 43 percent holding their present position for less than 5 years. Respondents were responsible for supervising an average of 127.7 teachers. The modal income level for this population was $22,000 to $23,999 with 15 percent having annual income levels in excess of $30,000.

Table 1

Number and Percentage of Questionnaires Mailed and Returned by National Association, Supervisors of Agricultural Education Administrative Regions

National Administrative Region	Questionnaires Mailed	Number Returned	Percent Returned
Eastern Region	52	44	85
Southern Region	58	49	84
Central Region	47	42	89
Western Region	52	44	85
Total	209	179	86

Job Satisfaction And Personal And Situational Characteristics

Using the Index of Job Satisfaction to measure "overall" job satisfaction, possible scores could range from 18 to 90. The scores for the respondents in this population ranged from 36 to 89 with a mean score of 71 and a mode of 70. Table 2 presents a summary of data obtained from the regression of job satisfaction on selected personal and situational characteristics. The squared part correlation coefficients represent the unique contribution of each predictor variable to the explained variance in the criterion variable when the effects of all other predictor variables are controlled.

When all predictor variables were considered jointly, salary explained the largest proportion of variance in job satisfaction with an R^2 of .05. The squared part correlation coefficient was .01, indicating that the magnitude of the relationship between salary and job satisfaction was small effect size. Years of supervisory experience was the variable which explained an additional 2 percent of the unexplained variance. The squared part correlation coefficient was .01, indicating a small effect size. The variable organizational structure explained approximately 2 percent of the unexplained variance in job satisfaction. The squared part correlation coefficient for organizational structure and job satisfaction was .02 indicating a small effect size. The variable organizational structure made the largest unique contribution to explained variance in job satisfaction when controlling for interaction effects.

Each of the variables years of teaching experience, age, marital status, years of education and number of teachers supervised explained less than 1 percent of additional variance with the squared part correlation coefficients indicating a relationship to job satisfaction of less than small effect size. The total proportion of variance explained by the eight predictor variables was approximately 10 percent when all variables were considered jointly. The sum of the unique contribution of each predictor variable when interaction effects of other variables were controlled explained approximately 6 percent of the variance in overall job satisfaction.

Job Satisfaction and Intrinsic And Extrinsic Facets

Table 3 presents results of the regression of job satisfaction on five intrinsic job satisfier facets. Regression analysis showed that 33 percent of the variance in overall job satisfaction was explained by the job satisfier facets. When all satisfier facets were considered jointly they represented a large effect size. The satisfier facet achievement accounted for 26 percent of the variation in job satisfaction when considered jointly with other facets. Responsibility explained an additional 5 percent of the variation in job satisfaction, while recognition, advancement, and the work itself jointly explained less than 2 percent of the unexplained variance. The zero order correlation coefficients for each intrinsic facet and job satisfaction indicated a positive relationship with the magnitude of the relationship ranging from large effect size to small effect size.

Table 2

Regression of Job Satisfaction on Selected Personal and Situational Characteristics

Characteristics	Multiple R	R^2	R^2 Change	Partial Regression Coefficient	Squared Part Correlation Coefficient
Salary	.22	.049	.049	.45	.013
Years of Supervisory Experience	.26	.067	.018	.23	.012
D3 (Office Location)[a]	.28	.081	.013	-2.11	.022
Years of Teaching Experience	.29	.086	.005	.17	.007
D2 (Office Location)[b]	.30	.093	.007	3.50	
Age	.31	.096	.003	- .09	.002
Years of Education	.31	.097	.001	.25	.001
DUM1 (Marital Status)[d]	.31	.09[illegible]	.001	.69	.000
D1 (Office Location)[c]	.31	.098	.000	.40	
Number of Teachers Supervised	.31	.098	.000	.00	.000
(Constant)				66.36	

[a] D3, Central office location with regional supervisory responsibilities

[b] D2, Regional office location with statewide supervisory responsibilities

[c] D1, Regional office location with regional supervisory responsibilities

[d] DUM1, Married (have children)

Table 4 presents a summary of data obtained from the regression of job satisfaction on five extrinsic job dissatisfier facets. Approximately 24 percent of the total variance in job satisfaction was explained by five extrinsic facets. When all dissatisfier facets were considered jointly they represented a medium effect size. The extrinsic facet supervision explained the largest proportion of variance (approximately 10 percent) when considered jointly with all extrinsic facets. Salary accounted for the second largest proportion of unexplained variance with an R^2 of .07. Policy and administration explained an additional 4 percent, while interpersonal relations and working conditions jointly explained an additional 2 percent of the variance in job satisfaction. The zero order correlation coefficients for each extrinsic facet and job satisfaction indicated positive relationships of medium effect size.

CONCLUSIONS

The analysis and interpretations of the data presented in the study support the following conclusions:

1. State officials were satisfied with their overall work situation.

2. The participants were less satisfied with the extrinsic facets of their job than with intrinsic facets.

3. Age, marital status, years of education, years of teaching experience and number of teachers supervised were not related to job satisfaction.

4. Of the predictor variables included in this study salary and years of supervisory experience were the best predictors of job satisfaction.

5. Intrinsic job satisfier facets were better predictors of job satisfaction than were extrinsic job dissatisfier facets.

6. The participants were least satisfied with company policy and administration, salary, and opportunity for advancement.

7. These individuals were most satisfied with the work itself, interpersonal relations, and achievement in that order.

8. The intrinsic facets (achievement, advancement, recognition, responsibility, and the work itself) were positively related to job satisfaction with the magnitude of the relationships ranging from large effect size to small effect size.

9. The extrinsic facets (interpersonal relations, policy and administration, salary, supervision, and working conditions) were positively related to job satisfaction with the magnitude of the relationships being medium effect size.

Table 3

Regression of Job Satisfaction on Intrinsic Job Satisfier Facets

Facet	Multiple R	R^2	R^2 Change	Partial Regression Coefficient	r
Achievement	.51	.263	.263	2.89	.51
Responsibility	.56	.313	.050	1.74	.45
Recognition	.57	.322	.009	.78	.35
Advancement	.57	.327	.005	.60	.18
Work Itself	.57	.327	.000	-.89	.32
(Constant)				51.85	

Table 4

Regression of Job Satisfaction on Extrinsic Job Dissatisfier Facets

Facet	Multiple R	R^2	R^2 Change	Partial Regression Coefficient	r
Supervision	.31	.098	.098	.81	.31
Salary	.41	.171	.073	1.65	.28
Policy and Administration	.46	.214	.043	1.45	.30
Interpersonal Relations	.48	.229	.015	.81	.29
Working Conditions	.48	.235	.006	.70	.30
(Constant)				54.56	

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A COMPARISON OF PERCEIVED JOB SATISFACTION OF NON-VOCATIONAL AND VOCATIONAL TEACHERS

by

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INTRODUCTION

How satisfied are vocational teachers with their jobs when compared to non-vocational teachers? Would a vocational or a non-vocational teacher be more likely to recommend that their students go into teaching in their subject matter area? This study was initiated in an attempt to find the answers to these and other related questions.

With a vocational teacher shortage existing in Louisiana and in other states, vocational teacher educators need to know if vocational teachers perceive themselves to be more satisfied with their job than do non-vocational teachers. If so, this information could be used to attract new teachers into vocational teacher education programs.

Also, instructional supervisors in public school systems could use information on perceived job satisfaction as an aid in selecting supervisory practices that will result in retaining teachers and increasing the level of job satisfaction among the teachers they supervise.

OBJECTIVES

The purpose of this study was to compare the perceived level of job satisfaction of vocational and non-vocational teachers in public high schools in Louisiana. The objectives were:

1. To determine the perceived job satisfaction level of teachers in Louisiana. (Question #3)
2. To determine if significant differences exist between the perceived job satisfaction levels of vocational and non-vocational teachers. (Questions #3-10)
3. To determine which group, if either, perceived themselves to be more likely to leave the profession of teaching. (Questions #7 & 8)
4. To determine which group, if either, would be more likely to recommend that their students enter their teaching field. (Question 6)
5. To determine which group, if either, would be more likely to major in the same field in college again if they were starting anew. (Question 9)

PROCEDURES

The descriptive survey method of research was used in this study. A questionnaire (Appendix A) consisting of ten questions was mailed to 500 public high school teachers in ten randomly selected parishes. A proportionate random sample size of 225 vocational teachers and 275 non-vocational teachers was selected from each of the ten parishes using a list obtained from the Louisiana State Department of Education.

In order to control for variables such as school polices, school administrators, school size, professional climate, and other extraneous variables, academic teachers were selected only from those schools in which vocational programs existed. Also, in order to insure that the two groups of teachers would be comparable, one additional control was used. For every high school from which one or more vocational teacher was selected, a number equivalent to the number of vocational teachers selected multiplied by a factor of 1.223 was used as the basis for the selection of non-vocational teachers from that school. (Note 225 vocational teachers times factor of 1.223 is approximately equal to 275, the number of non-vocational teachers to be selected.)

A framing error was encountered during the mailout stage which yielded four non-useable questionnaires from the vocational teachers and five non-useable questionnaires from the non-vocational teachers, for a total of nine. This resulted in a revised sample size of 491--221 vocational teachers and 270 non-vocational teachers.

The questionnaire was mailed to teachers at their school address. The first mailout yielded a 50.73 percent response rate. Two weeks later, a follow-up was conducted by mailing another questionnaire to non-respondents. An additional 110 responses were received, which brought the total number of useable responses to 355, or 72.3 percent. Of the 355 questionnaires returned, 161 or 72.9 percent were from the 221 vocational teachers sampled, and 194, or 71.9 percent were from the 270 non-vocational teachers sampled.

The two sample "t" test using the .05 level of significance was used in data analysis. The "t" test was used with the assumption of homogeneity of variances at the .05 level. This assumption was not rejected on any of the eight questions.

LIMITATIONS

The following factors resulted in limitations on the study:

1. The questionnaire was designed to measure "perceived" job satisfaction; therefore, the researchers do not claim that "real" job satisfaction has been measured.

2. By randomly selecting ten parishes from the 64 parishes in the state and then drawing a stratified sample from these ten parishes, the resulting sample may not adequately reflect the perceptions of Louisiana teachers because of the small number of parishes.

3. In order to secure the highest return rate possible with two mailouts and no follow-up, the decision was made to shorten the questionnaire by eliminating the usual items designed to secure demographic information. By eliminating these demographic

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items, data were not secured that would have aided in further analyses of the responses. These additional analyses may also have aided in explaining the findings.

4. Even though a 72.3 percent response rate may be adequate, the lack of a follow-up of non-respondents prevented a determination of whether respondents differed significantly from non-respondents. This additional follow-up would have aided in determining the representativeness of the data and, therefore, the validity of the study. No follow-up of non-respondents was conducted due to a lack of necessary funds and time.
5. One parish accounted for 44 percent of the vocational teachers in the ten parishes randomly selected and also in the sample population surveyed; therefore, this may have biased or skewed the data.

FINDINGS

Questions number one and two were used primarily to obtain demographic data. Question one sought to determine what subject(s) the teacher taught. The responses were used to verify that the two samples had been properly selected.

In response to question number two which asked for the number of years of teaching experience, mean number of years teaching was 13.19 for the non-vocational teachers and 12.41 years for the vocational teachers.

Table I displays the responses to the Likert scaled items on the questionnaire. The teachers were asked to respond to eight questions that were designed to secure their responses regarding several indicators related to perceived job satisfaction. The data indicate that the teachers surveyed perceived that they were satisfied with their jobs. The teachers responded in a positive manner or were neutral in their responses to all eight questions. The responses are summarized below. Both non-vocational and vocational teachers:

1. Were satisfied with their present teaching positions.
2. Believed that other teachers who taught the same subject as they do were slightly satisfied.
3. Described their level of enjoyment in teaching as "much" enjoyment.
4. Would slightly encourage their students to go into teaching in their subject matter area.

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TABLE I

COMPARISON OF PERCEIVED JOB SATISFACTION RESPONSES OF NON-VOCATIONAL AND VOCATIONAL TEACHERS

QUESTIONS	Range	OVERALL[1] MEANS	MEAN RESPONSES[2]		DF	T-VALUE
			V.T.	N.V.T.		
2. How many years have you been teaching?	0-37	12.84	12.41	13.19	353	.97
3. How satisfied are you with your present teaching position?	1-6	2.30	2.18	2.40	353	1.58
4. How satisfied do you feel other Louisiana teachers are who teach the same subject(s) as you?	1-6	2.67	2.56	2.77	346	1.82*
5. How much do you enjoy teaching?	1-5	1.70	1.61	1.78	353	1.81*
6. How strongly would you encourage your students to go into teaching in your subject matter area?	1-6	3.05	2.78	3.21	351	3.19**
7. If you were offered a non-teaching job today with salary and benefits equal to those you are currently receiving, would you take the job and leave teaching?	1-4	2.77	2.86	2.68	349	-1.66*
8. Do you believe that you will eventually leave teaching and go into another profession (for reasons other than retirement)?	1-4	2.73	2.80	2.68	353	-1.11

(Continued)

TABLE I--Continued

QUESTIONS	Range	OVERALL[1] MEANS	MEAN RESPONSES[2] V.T.	MEAN RESPONSES[2] N.V.T.	DF	T-VALUE
9. If you had it to do over would you major in the same field in college again?	1-4	2.07	1.95	2.18	352	1.90*
10. Is there a subject matter area where you feel the teachers are more satisfied with their jobs than you are?	1-4	2.86	3.07	2.69	346	-3.64***

* Significant at the .10 level.

** Significant at the .05 level.

*** Significant at the .005 level.

Note 1: A "1" on questions 3 thru 6 and question 9 indicated a highly positive answer. A reversed scale was used on questions 7, 8, and 10, with a "1" on the scale being a highly negative answer.

Note 2: V.T. means vocational teachers and N.V.T. means non-vocational teachers.

5. Responded in a neutral manner (between probably and doubtful) when asked if they would leave teaching and take a job with salary and benefits equal to those they are currently receiving if a non-teaching job were offered.

6. Responded in a neutral manner (between probably and doubtful) when asked if they believed that they would eventually leave teaching and go into another profession for reasons other than retirement.

7. Would probably major in the same field in college again if they had it to do over again.

8. Were doubtful that there was a subject matter area where the teachers were more satisfied with their jobs than they were.

When the responses were analyzed using the t-test at the .05 level, significant differences between the responses of vocational and non-vocational teachers were found on question numbers 6 and 10. Vocational teachers responses indicated that they were significantly more likely to encourage their students to go into teaching in their subject matter area than were non-vocational teachers (Question 6).

Also, vocational teachers were significantly less likely to perceive that there was a subject matter area where they felt the teachers were more satisfied with their jobs than they were (Question 10). The responses to this item differed significantly at the .0005 level.

Questions 3, 4, 5, 7, 8, and 9 yielded no significant differences between the responses of non-vocational and vocational teachers at the .05 level. However, significant differences did exist between the responses of vocational and non-vocational teachers at the .10 level for questions 4, 5, 7, and 9. For all six questions, the vocational teachers' responses indicated a higher level of perceived job satisfaction than the responses from the non-vocational teachers.

CONCLUSIONS

1. Based on the responses to question three, it was concluded that teachers perceived they were "satisfied" with their jobs in Louisiana. (Objective 1, Question 3)

2. Even though no significant difference was found at the .05 level between the responses of vocational and non-vocational teachers to question 3 (which asked the teachers' perceived level of job satisfaction), analysis of the responses to the eight questions concerning job satisfaction provide additional information:

   a) For questions six and ten, significant differences were found at the .05 level, with vocational teachers having a significantly more positive response to both questions. This is an indicator of a higher level of job satisfaction.

b) For questions four, five, seven and nine, no significant differences between the responses of the two groups were found at the .05 level. However, if the .10 level had been pre-set, analyses of the responses to all four questions would have resulted in significant differences between the two groups. Even though no significant differences existed, the vocational teachers responses to the four questions were more positive. Again, this is an indicator of a higher level of job satisfaction.

c) The vocational teachers' responses on questions three and eight were more positive than were the responses of the non-vocational teachers, which also is an indicator of a higher level of job satisfaction.

Based on these findings, it was concluded that vocational teachers possess a marginally higher level of perceived job satisfaction than do non-vocational teachers. (Objective 2, Questions 3-8)

3. Based on the analyses of the responses to questions seven and eight, it was concluded that no significant differences existed between the two groups. Therefore, neither group perceives themselves to be more likely to leave the profession of teaching. (Objective 3)

4. The null hypothesis that no significant difference existed between the two groups was rejected at the .05 level for questions number six and ten. The alternate hypothesis that significant differences do exist was accepted for these two questions. Therefore, it was concluded that vocational teachers were significantly more likely than non-vocational teachers to encourage their students to go into teaching in their vocational area (Objective 4, Question 6), and significantly less likely to believe that there is a field where teachers are more satisfied with their jobs (Not part of a specific objective).

5. The null hypothesis that no significant difference existed between the two groups was not rejected at the .05 level for question nine. Therefore, neither group was more likely to perceive that they would major in the same field in college again if they were starting anew. (Objective 5, Question 9)

RECOMMENDATIONS

Based on the findings and conclusions of this study, it is recommended that:

1. Additional studies be conducted to confirm or refute the findings of this study and, if confirmed, to identify factors contributing to any existing differences in job satisfaction levels.
2. The findings of this study be used to aid in recruitment of prospective vocational teachers.

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APPENDIX A

1. What subject(s) do you teach? ____________________

2. How many years have you been teaching? ____________________

CIRCLE YOUR RESPONSE FOR ALL ITEMS BELOW

3. How satisfied are you with your present teaching position?

very satisfied	satisfied	slightly satisfied	slightly dissatisfied	dissatisfied	very dissatisfied

4. How satisfied do you feel other Louisiana teachers are who teach the same subject(s) as you?

very satisfied	satisfied	slightly satisfied	slightly dissatisfied	dissatisfied	very dissatisfied

5. How much do you enjoy teaching?

very much   much   somewhat   very little   none

6. How strongly would you encourage your students to go into teaching in your subject matter area?

strongly encourage	encourage	slightly encourage	slightly discourage	discourage	strongly discourage

7. If you were offered a non-teaching job today with salary and benefits equal to those you are currently receiving, would you take the job and leave teaching?

yes   probably   doubtful   no

8. Do you believe that you will eventually leave teaching and go into another profession (for reasons other than retirement)?

yes   probably   doubtful   no

9. If you had it to do over, would you major in the same field in college again?

yes   probably   doubtful   no

IF YOUR ANSWER IS NO OR DOUBTFUL, WHAT FIELD WOULD YOU HAVE MAJORED IN?

____

10. Is there a subject matter area where you feel the teachers are more satisfied with their job than you are?

yes   probably   doubtful   no

IF YOUR ANSWER IS YES OR PROBABLY, WHAT IS THAT SUBJECT MATTER AREA?

____

1982 NATIONAL AGRICULTURAL EDUCATION
RESEARCH MEETING
CRITIQUE OF RESEARCH

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INTRODUCTION

Let me at the outset say that it was a real pleasure to critique these three studies. One reason for this pleasure was the subject matter with which they dealt. It seemed to me they dealt with some of the teacher concerns of great importance to Agricultural Education, teacher skills, teacher liability and extended service.

In addition to important subject matter, the design of these studies were strong and sound. They had clearly stated objectives backed up by sound methodology to achieve those objectives. All three studies indicated a thorough review of the literature to establish the basis for the studies. Additionally, all had in-depth analysis of their findings and strong conclusions and recommendations based on those findings.

Another source of pleasure for me was to find three studies asking the right people. These studies had a well thought out logical basis for the questions they asked. They also had carefully considered who could give them the answers they sought.

Another strength of the studies was the questionnaire development. Strong literature reviews, panels of experts and similar instruments were all utilized to develop very strong instruments to gather the data. This is very important since the data gathered is only as good as the instrument used to gather it.

Some of my frustrations resulted, not from the studies themselves, but from the lack of information to answer some of my questions due to the condensed versions of the studies and the lack of questionnaires to view. These questions and concerns I will address in the individual study critiques.

TEACHER LIVESTOCK SKILLS STUDY

Strengths

I felt this study was strong in research design; especially thorough in methodology; meticulous in instrument development and refinement; and outstanding in development of conclusions and recommendations. The most noteworthy accomplishment of this study was that the researcher was able to maintain a clear perspective of the "big picture" while at the same time being very careful to correctly accomplish the details. Most researchers have a great deal of difficulty "seeing the forest for the trees" after they have been whittling away on those trees for a while.

Ed did not fall for that bait but pointed out clearly that teachers and prospective teachers were not getting livestock skills and were not teaching them to their students. In addition, his high response rate was worthy of note, as was his double sampling to determine non-respondent differences. He even included an appendix so his readers could see what the specific skills were.

Question and Concerns

It was somewhat difficult to come up with real questions and concerns over this excellent study. I could wonder if two were enough for a double sample. However, with the high response rate, there were not very many to use for a double sample. I could also question the equalness of the intervals on the performance levels scale, but I would have treated it the same way he did, so it is of no real consequence. I was unable to determine which specific skills in the groups of skills were least performed, but I probably could in the full study. I would simply say excellent study, Ed.

TEACHER LIABILITY STUDY

Strengths

This study had a strong set of objectives, well designed test, thorough review of literature and strong conclusions and recommendations. Its somewhat unique topic should be very thought provoking for teachers and teacher educators alike. Again, I would have to rate this a very fine study.

Questions and Concerns

The only real question I can raise about this study is its generalizability, even to the Ag teachers of Illinois. The "accidental" sample really only included about one third of the teachers who were professional enough to attend the state teachers conference. It would be interesting to compare these responses to a sample of the two-thirds non-attenders group.

The other question I would raise may only be a clerical error. Does Illinois law not require teachers to provide proper machine guards? In two places, p. 4 and p. 7 tables, it is reported that it does not. The narrative on p. 7 indicates otherwise. Which is correct?

Again, my comment is, this is a good study.

EXTENDED SERVICE STUDY

Strengths

The idea behind this study was well concieved. Instead of depending on "opinions of the profession and status reports of what is being done," it purposed to find out the thinking of the people who count: students, parents, employees and administrators. This study had a well written group of conclusions and recommendations. Some extremely important points were brought out concerning inconsistencies of answers, benefit of the FFA and parent, employer and administrator support of financing extended service.

Questions and Concerns

Not enough detail was provided in this report to answer many of my questions and address my concerns. I would certainly have liked to see the questionnaire. What was the five item response scale and which direction was

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it scaled? Were items treated differently which asked actual situation questions as opposed to those items asking for value judgements? What was the return date for each group? Were the students and parents matched or non-related? How were the employees purposely selected?

These were some of the questions I couldn't answer due to lack of information. This appears to be a sound, well conducted study. These are just a few questions I would like to be able to answer.

LIVESTOCK SKILLS TAUGHT IN VOCATIONAL AGRICULTURE CLASSES AND POSSESSED BY CURRENT AND PROSPECTIVE OHIO AGRICULTURAL PRODUCTION TEACHERS

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INTRODUCTION

Over the years, a number of authors in the field of agricultural education have stressed the importance of technical proficiency for those planning to teach vocational agriculture. Martin (1956, p. 136) explained the critical nature of this technical expertise with the following statement:

> Among the multiplicity and diversity of resources needed by teachers of vocational agriculture, practical knowledge in scientific agriculture and pertinent manipulative skills are of greatest value.

While both knowledge and skill in technical agriculture have been generally recognized as essential for vocational agriculture teachers, some believe the instruction in technical agriculture at four year colleges and universities has been mostly theoretical, emphasizing knowledge while giving little attention to the practice and development of technical skills (Warmbrod, 1979). Others have joined Martin and Warmbrod in stressing the need for technical skill development in those preparing to teach vocational agriculture (Mortensen, 1981; Cole, 1981; Leske and Salem, 1979).

The importance of vocational agriculture teachers having the ability to perform technical skills has been widely recognized. Researchers have generally agreed that successful instruction in agricultural production programs requires that teachers be able to perform the essential skills in animal science and other technical areas (Thomas, 1979). Rhoad (1943, p. 3) stated that "teachers have failed to teach their students how to perform certain vital farm tasks because, among other things, they have never performed those tasks and therefore lack the self-confidence necessary to attempt this teaching". Contemporary educators may be astonished to learn that this statement was forwarded nearly forty years ago, for it seems to express an appropriate concern of teacher preparation today.

OBJECTIVES OF THE STUDY

The purpose of this study was to determine the livestock skills possessed by current and prospective agricultural production teachers and to examine the extent to which livestock skills were taught in high school vocational agriculture classes. Research questions providing focus for the study included:

1. What was the self-reported performance level of current and prospective Ohio agricultural production teachers with respect to livestock skills?

2. Where did current and prospective teachers report that that they acquired their present levels of skill performance?

3. How confident were current and prospective teachers in their ability to perform and demonstrate these skills?

4. To what extent did Ohio teachers report that they taught these skills during the immediate past year in their high school classes, and what teaching methods were reportedly used?

5. What was the relationship between performance levels reported by current and prospective teachers and (1) confidence level and (2) demographic characteristics?

The results of this study could make a significant contribution to the improvement of agricultural teacher preparation in Ohio. Some major outcomes of the study included a documentation of the livestock skill performance levels held by current and prospective teachers, an indication of inservice needs, and a documentation of the livestock skills taught in vocational agriculture classes and the methods used for this teaching. These results could assist in evaluating the teacher education program and suggest revisions needed in technical agriculture courses offered by the various departments in the College of Agriculture. In addition, the list of skills identified in the study could serve as an entry and exit checklist for students in the teacher education program and as a guide for focusing the technical growth of practicing teachers.

METHODS AND PROCEDURES

The research design implemented in the study was classified as descriptive correlational. Potential measurement, nonresponse, frame, and sampling errors were controlled via the research methodology utilized. Two target populations were involved in the study. The population of current teachers included all Ohio agricultural production teachers employed during the 1981-82 school year. The 1981-82 Ohio Agricultural Education Directory served as the frame for this population

(N=323). The second population consisted of all agricultural education majors at The Ohio State University during the 1982 winter quarter who were seeking certification as an agricultural production teacher. A list of all agricultural education advisees, including both single and dual majors, was available from the Department of Agricultural Education. Students majoring in agricultural education only, as well as those with a dual major in agricultural education and poultry science, animal science, dairy science, agronomy, or agricultural economics comprised the prospective teacher population (N=134).

The essential skills needed for producing swine, beef, dairy, poultry, and sheep were identified through several processes. First, an extensive literature review was performed, and a number of skills were identified for each species. Next, five Ohio State faculty members in the College of Agriculture (one for each livestock species) were selected to review the list of skills. Each faculty member also provided the name of a top producer, who was personally visited and asked to review the list of skills and make any additions, deletions, or modifications deemed necessary. The list of skills was restricted to those performed only with the live animal. A total of 61 skills was identified as having content validity and was included in the survey instrument (see Appendix A). These included 13 swine, 17 general cattle, 8 dairy, 15 sheep, and 8 poultry skills.

Data were collected from current and prospective teachers through the use of a mail questionnaire. The instrument was field tested for clarity, and reliability was examined using pilot test data. Reliability assessment consisted in part of an examination of the internal consistency of the confidence levels reported by current and prospective teachers. Cronbach's Alpha was calculated to be r=.95 for the current teacher group and r=.97 for the prospective teacher group. In addition, the test-retest procedure was used to examine stability of responses. Coefficients of r=.99 for the prospective teacher group and r=.98 for the current teacher group were derived from the test-retest data.

The instrument was distributed to respondents through the initial mailing, which contained the instrument and a cover letter, a postcard follow-up reminder, and two additional follow-up letters containing replacement questionnaires. The instrument was compiled in booklet fashion and mailed to a random sample of 100 current agricultural production teachers and 60 prospective teachers. Two separate formulas, which took into account the desired levels of accuracy and confidence in the results, were used to determine the sample size needed for each group (Elliott, 1980; Cochran, 1977). Fifty-five questionnaires, all of which were usable, were returned from the prospective teacher group, resulting in a response rate of approximately 92 percent. A total of 90 questionnaires were returned from the current teacher group. However, four were received after the established deadline, and an additional four were not usable due to partial completion. Thus, the current teacher data sample consisted of 82 questionnaires, or 82 percent of the sample.

A random sample of two nonrespondents was drawn from each sample in the study for the purpose of examining possible differences between

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respondent and nonrespondent groups. Differences between the two groups were determined by examination of the demographic data and comparison by t-tests. Results showed no significant differences between the responding and nonresponding groups for each of the two samples in the study, thus allowing for generalization of the results to the target populations under study.

Descriptive statistics were used to summarize and analyze the data, and possible relationships between variables were examined using Pearson correlation coefficients.

RESULTS

Characteristics of Prospective Teachers

Over 80 percent of the prospective teachers reported they were reared on a livestock farm. In addition, about two-thirds indicated they either owned or worked on a livestock farm at the time of data collection.

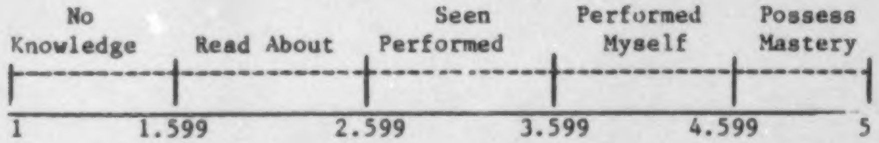
The number of years of high school vocational agriculture completed by the prospective teachers ranged from zero to four. However, over two-thirds reported they had completed four years of vocational agriculture, and the average prospective teacher had completed 3.07 years.

All prospective teachers listed agricultural education as a major, and approximately two-thirds indicated they were also carrying a second major. Over one-half of the dual majors were a combination of agricultural education and animal science, while another one-fourth were a combination of agricultural education and agricultural economics. About three-fourths of the responding sample were male and about one-fourth female.

The average prospective teacher had completed approximately 140 quarter hours by the end of winter quarter, placing them in their late junior or early senior year of college. The number of hours of livestock production courses completed ranged from zero to 48, with an average of 16.8 quarter hours, or four to six courses completed.

Livestock Skills Performance Levels Reported by Prospective Teachers

Prospective teachers reported their level of performance for each livestock skill based upon the following steps, which represented values on an interval scale: (1) no knowledge; (2) read about; (3) seen performed; (4) performed myself; and (5) possess mastery. The resulting mean performance levels were discussed using the following design of interpretation:



None of the 61 mean performance levels calculated from data provided by prospective teachers were greater than 3.818. Over 60 percent were located in the middle (seen performed) of the performance scale, and about one-fourth fell into the "read about" range of the scale. These results indicated that, on the average, a large majority of the prospective teachers had only read about or seen the skills performed but had never actually performed the skills themselves (see Table 1).

The highest mean performance level was found for the set of general cattle skills ($\bar{x} = 3.220$) and the lowest for the set of poultry skills ($\bar{x} = 1.799$). Overall, the average level of performance for the set of 61 livestock skills was found to be $\bar{x} = 2.847$ for the prospective teacher group.

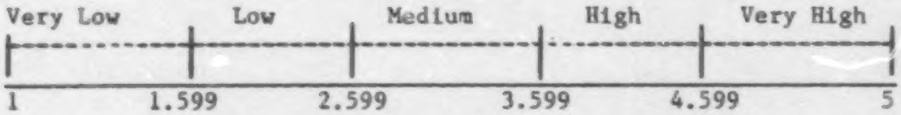
Table 1

Mean Livestock Skills Performance Levels of Prospective Agricultural Production Teachers

	Livestock Species	$\bar{x}$	SD
1.	general cattle	3.220	0.678
2.	swine	3.154	0.865
3.	beef and dairy combined	3.054	0.673
4.	sheep	2.804	1.074
5.	dairy	2.691	0.932
6.	poultry	1.799	0.739
7.	overall	2.847	0.600

Livestock Skills Confidence Levels Reported by Prospective Teachers

For each of the 61 skills, prospective teachers also reported their level of confidence in their ability to perform or demonstrate the livestock skill to others. A five point scale, ranging from (1) very low to (5) very high, was used. The resulting mean confidence levels were interpreted in a similar fashion as the mean performance levels, utilizing the scale below.



Only one of the 61 mean confidence levels was found to be high or very high. Nearly three-fourths of the mean confidence levels fell into the medium range, while about one-fourth were in the low range. As with performance levels, the highest mean confidence level pertained to general cattle skills ($\bar{x} = 3.073$) and the lowest to the set of poultry skills ($\bar{x} = 1.860$) (see Table 2). Overall, the average level of confidence for the set of 61 livestock skills was $\bar{x} = 2.776$, or medium for the prospective teacher group.

Table 2

Mean Livestock Skills Confidence Levels of Prospective Agricultural Production Teachers

Livestock Species	$\bar{x}$	SD
1. general cattle	3.073	0.804
2. swine	3.008	0.969
3. beef and dairy combined	2.937	0.772
4. sheep	2.811	1.156
5. dairy	2.644	1.012
6. poultry	1.860	0.780
7. overall	2.776	0.662

Where Prospective Teachers Learned Livestock Skills

Prospective teachers were asked to indicate the major source or setting where they acquired their present skill performance level. The possible sources included high school vocational agriculture, the home farm, college course, internship, or during student teaching/early experience. For all livestock species, the five sources were cited by prospective teachers in the following order, from most often cited to least often cited: (1) home farm, (2) college course, (3) high school vocational agriculture, (4) internship, and (5) student teaching/early experience. In all species the home farm was cited as the major source of skill acquisition by a majority of the respondents.

In none of the species did a majority of prospective teachers report that they had performed or mastered the skill, although the set of general cattle skills came very close (47.1 percent). The lowest average percentage of teachers reporting skill performance or mastery appeared for the poultry skills, where an average of 9.8 percent indicated they had performed the skill. For the set of 61 skills, an average of about one-third (32.1 percent) of the prospective teachers reported they had performed the skill or possessed skill mastery.

Prospective teachers who reported they had actually performed or mastered the skill were selected in an effort to identify their major sources of skill development. For all species, one-half or more of the prospective teachers indicated they learned to perform or had mastered the skill on the home farm. In fact, for most species, a large majority of prospective teachers reported the home farm as their major source of skill acquisition. Overall, an average of seven in ten prospective teachers who had performed the skill learned to do so on the home farm. Approximately one in ten developed the skill during a college course or internship, while about one in twenty cited high school vocational agriculture as their major source of skill acquisition.

Relationship of Performance Level to Confidence Level and Demographic Factors

For all species, prospective teachers who reported higher performance levels had a very strong tendency to report higher levels of confidence in their ability to demonstrate the skill to others (see Table 3).

Table 3

Pearson Correlation of Livestock Skills Performance Levels by Factors Possessed by Prospective Teachers

Factor	r
1. confidence level	.89**
2. current farm work or ownership	.45**
3. farm background	.45**
4. livestock production hours completed	.43**
5. years of high school vo-ag completed	.30*
6. sex	.15
7. number of college majors	.07
8. total college hours completed	.04

* $p < .05$
** $p < .001$

Higher livestock skills performance levels were reported by prospective teachers who tended to (1) currently own or work on a livestock farm, (2) have been reared on a livestock farm, (3) have completed more hours in livestock production course work in college, and (4) have completed a greater number of years of high school vocational agriculture.

Characteristics of Current Teachers

The number of years of agriculture teaching experience for the group of current teachers ranged from one to 49. However, about 50 percent of the teachers had taught eight years or less, and the average teacher had taught just over 10 years. About one-fourth of the teachers supervised a school livestock farm. Over 90 percent had been reared on a livestock farm, and approximately one-half reported they currently owned or worked on a livestock farm.

The number of years of high school vocational agriculture completed by the current teachers ranged from zero to four, with the average teacher completing about two and one-half years. Only three of the 82 teachers in the current teacher data sample were female, and about 90 percent of the teachers had earned a degree from Ohio State in agricultural education. Only about 20 percent reported they had earned a dual major.

Livestock Skills Performance Levels Reported by Current Teachers

Teachers located themselves on the performance level continuum by circling their highest level of performance for each skill. For the 61 skills, none of the mean performance levels were greater than 4.152, and only two were between 4.000 and 5.000. Approximately 40 percent were between 3.600 and 4.599 (high), and another 50 percent fell between 2.600 and 3.599 (medium). Thus, a slight majority of the mean performance levels were less than 3.600, indicating that, on the average, just over one-half of the teachers had only seen the skill performed and had not performed it themselves.

The highest mean performance level was found for the set of 13 swine skills ($\bar{x} = 3.636$) and the lowest for the set of poultry skills ($\bar{x} = 2.310$) (see Table 4). Overall, the current teacher group reported an average level of performance for the 61 skills of $\bar{x} = 3.341$, placing them in the "seen performed" range.

Table 4

Mean Livestock Skills Performance Levels of Current Agricultural Production Teachers

	Livestock Species	$\bar{x}$	SD
1.	swine	3.636	0.628
2.	general cattle	3.594	0.579
3.	beef and dairy combined	3.444	0.589
4.	sheep	3.428	0.830
5.	dairy	3.140	0.859
6.	poultry	2.310	0.777
7.	overall	3.341	0.518

Livestock Skills Confidence Levels Reported by Current Teachers

For each of the 61 skills, teachers also reported their level of confidence in their ability to demonstrate the skill. The scale ranged from (1) very low to (5) very high, and approximately one-half of the mean confidence levels were in the medium range. None of the average levels of confidence were found to be very high, but about one-fourth were found to be high. As with mean performance level, the highest mean confidence level was calculated for the set of swine skills ($\bar{x} = 3.347$) and the lowest for the set of poultry skills ($\bar{x} = 2.083$) (see Table 5). Overall, the average level of confidence reported by the current teachers for the set of 61 skills was $\bar{x} = 3.053$, or medium.

Table 5

Mean Livestock Skills Confidence Levels of Current Agricultural Production Teachers

	Livestock Species	$\bar{x}$	SD
1.	swine	3.347	0.729
2.	general cattle	3.242	0.731
3.	beef and dairy combined	3.135	0.689
4.	sheep	3.135	0.972
5.	dairy	2.937	0.953
6.	poultry	2.083	0.837
7.	overall	3.053	0.600

Where Current Teachers Learned Livestock Skills

Teachers were presented with five possible settings for skill acquisition and were asked to indicate their major source of skill development. The categories included (1) high school vocational agriculture, (2) the home farm, (3) college course, (4) internship, and (5) while teaching agriculture.

For the swine, general cattle, and dairy skills, the home farm was cited as the major source of skill acquisition by more teachers than any other source. While teaching agriculture was the second most often cited source, and college course was third. However, for the sheep and poultry skills, while teaching agriculture was cited as the primary source of skill development. High school vocational agriculture and internships were cited the least often by current teachers as their major source of livestock skill acquisition.

In only one species, swine, did an average of more than 50 percent of the current teachers report they had performed the specific skill. For the set of 61 livestock skills, an average of slightly more than one-third (37.5 percent) of the teachers reported they had performed the skill or possessed skill mastery.

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Current teachers who reported skill performance or mastery were selected in an effort to identify their major source of skill acquisition. For all species except poultry, an average of more than 50 percent of these teachers indicated they learned to perform the skill on the home farm. Nearly one-half of the teachers reported they learned to perform the poultry skills while teaching agriculture.

Teaching Methods Used for Livestock Skills

With the exception of poultry skills, where an average of three-fourths of the teachers reported they did not teach the specific skill, the use of livestock skills in teaching and the teaching methods used were fairly consistent across the livestock species. For the set of 61 skills, an average of almost 50 percent of the teachers reported they did not teach the specified skill. About one-third of the teachers used discussion only as the teaching method for the skill. Finally, an average of about 15 percent reported using either teacher demonstrations or student practice, both of which required direct experience with the live animal.

Relationship of Performance Level to Confidence Level and Demographic Factors

For all species, current teachers who reported higher performance levels had a very strong tendency to report higher levels of confidence in their ability to demonstrate the livestock skills (see Table 6). In addition, teachers who had performed the skills or possessed mastery tended

Table 6

Pearson Correlation of Livestock Skills Performance Levels by Factors Possessed by Current Teachers

Factor	r
1. confidence level	.87***
2. teaching method used	.59***
3. frequency of use in teaching	.39***
4. current farm ownership or work	.33**
5. supervision of school livestock farm	.31**
6. farm background	.29**
7. years of teaching experience	.25*
8. sex	-.12
9. years of high school vo-ag	.10
10. number of college majors	.09

* $p < .05$
** $p < .01$
*** $p < .001$

to report the use of teaching methods which involved teacher demonstrations or student practice with the live animal. Teachers reporting higher performance levels also tended to teach livestock skills more often. Higher livestock skills performance levels were reported by teachers who tended to (1) currently own or work on a livestock farm, (2) be responsible for supervising a school livestock farm, (3) have been reared on a livestock farm, and (4) have more years of agriculture teaching experience.

Based upon the results of the study, the following conclusions and recommendations were drawn:

1. The home farm is the major setting where students gain experience in actual performance of livestock skills. College courses give considerable attention to livestock skills, but not generally at the level of actual skill performance and practice. Since the average prospective teacher was found to have only read about or seen the livestock skill performed and actually never have performed it, college courses in livestock production aimed at preparing vocational agriculture teachers should provide more hands-on experience at performing and developing mastery of livestock skills.

2. Actual performance of a livestock skill leads to increased confidence in the ability one possesses to demonstrate the skill. Prospective teachers had only an average amount of confidence in their ability to demonstrate livestock skills, and a greater number of structured experiences should be developed that require performance of skills with live animals.

3. The average prospective teacher in this study was only two or three quarters away from graduation and entering teaching. Yet, an average of only one-third reported they had performed each skill, and over 80 percent had a livestock farm background. Although their knowledge about livestock skills can be expected to be higher, students with livestock farm backgrounds still do not have sufficient experience at performing livestock skills.

4. Students preparing to teach agricultural production should be encouraged to obtain as much farm experience as possible throughout their college career and enroll in as many livestock production courses as possible.

5. During the student teaching experience, cooperating teachers should be encouraged to share their technical as well as pedagogical expertise with their student teachers. This may involve helping the student teacher learn to perform new livestock skills during the student teaching/early experience period.

6. After entering the teaching profession, teachers considerably increase their livestock skill performance levels and confidence levels. However, few teachers who had not performed the skill at the time of graduation actually do so after beginning to teach. In other words, they continue to learn more about the skills. Likewise, a large majority of teachers who teach livestock skills tends to teach about the

skill, rather than actually demonstrate the skill to their students or provide for student practice.

7. Ohio agricultural production teachers who have actually performed livestock skills are more confident in their ability to demonstrate these skills. In turn, these teachers teach livestock skills more often and use methods involving live animal demonstrations and student practice more frequently.

8. Agricultural production teachers should be supported in their desire to own or work with livestock on a part-time basis, thus allowing them to further upgrade their livestock skill performance levels. In addition, school districts and vocational agriculture departments should be encouraged to establish and maintain school livestock farms.

9. The list of livestock skills validated in this study should be used as an entrance and exit checklist for teacher education students who are preparing to teach agricultural production in Ohio. Furthermore, the list of skills should be used continuously by agricultural production teachers in the field as they update their skills in informal and formal settings.

The following recommendations for further research are forwarded:

1. A study of similar purpose and design should be conducted with regard to skills pertaining to crop production. Many of these skills would involve the operation or adjustment of farm machinery.

2. There is a need to scientifically examine the knowledge, skills, and abilities attained by students enrolled in internship programs.

3. A need exists to conduct several longitudinal studies regarding the acquisition and use of livestock skills in teaching. Current agricultural production teachers should be examined to determine their patterns of teaching livestock skills as they enter and become established in teaching. In addition, a study examining the patterns and levels of skill development of college students should be undertaken.

4. There is a need for examining the home farm as a setting for learning about and acquiring livestock and other agricultural production skills.

5. Finally, the need exists to conduct a similar study using the high school student as the unit of analysis. A study of this type could give greater insight into the teaching and development of livestock skills in high school vocational agriculture students.

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APPENDIX A
Essential Livestock Skills

Swine

1. ear notch pigs
2. ear tag
3. clip tails
4. clip needle teeth
5. de-tusk boars
6. ring
7. castrate
8. give injections
9. artifically inseminate
10. probe backfat
11. treat for internal parasites
12. treat for external parasites
13. fit and show

Poultry

1. debeak chicks
2. candle eggs
3. vaccinate
4. treat for internal parasites
5. treat for external parasites
6. desnood turkeys
7. clip wings (turkeys)
8. artifically inseminate (turkeys)

Sheep

1. trim feet
2. treat for foot rot
3. ear tag
4. check temperature
5. treat navel cord
6. vaccinate
7. castrate
8. dock lambs
9. assist in lambing
10. shear
11. tag and crutch ewes
12. treat for parasites by drenching
13. treat for parasites with boluses
14. treat for parasites by dipping
15. fit and show

Beef and Dairy Skills (General Cattle)

1. treat for internal parasites
2. treat for external parasites
3. trim hooves
4. ear tag
5. tattoo
6. brand
7. treat navel cord
8. treat for bloat
9. check temperature
10. assist in calving
11. vaccinate
12. dehorn
13. castrate
14. artificially inseminate
15. palpate
16. implant growth stimulant
17. fit and show beef

Dairy Skills Only

1. treat calves for scours
2. draw milk samples
3. dry treat cows
4. install heat detectors
5. administer Calif. mastitis test
6. treat for mastitis
7. use proper milking techniques
8. fit and show dairy

DETERMINATION OF THE LEVEL OF KNOWLEDGE POSSESSED BY VOCATIONAL AGRICULTURE TEACHERS CONCERNING CLASSROOM LIABILITY

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DETERMINATION OF THE LEVEL OF KNOWLEDGE POSSESSED BY VOCATIONAL AGRICULTURE TEACHERS CONCERNING CLASSROOM LIABILITY

INTRODUCTION

Liability is defined as "the state of being liable, something that works to one's disadvantage." Liable is defined as "legally bound or obligated, as to make good any loss or damage that occurs in a transaction" (Webster 1970: p. 813). Educational liability is defined as the responsibility, by law, for damages associated with student injury.

Litigations against teachers were recorded as early as 399 B.C. Socrates was charged by his fellow citizens with "corruption of the young," and at the hands of 501 members, he was found guilty (Strickland, Phillips, and Phillips, 1976). While it was difficult to pinpoint the actual number of lawsuits to date, there has been a substantial increase. Hogan (1974, p. 7) stated:

> "in more than one hundred years between 1789 and 1896, there were 3,096 cases which have affected the organization, administration, and programs of the schools. By contrast, in the last five-year period, between 1967 and 1971, there were 3,510 such cases. Almost five hundred more cases in this five-year period (3510) than in the previous one hundred-year period (3096)."

Fetter and Patton (1979) indicated that during the period 1973 to 1976, there were more than four hundred personal liability actions, involving more than 1500 school officials. Along with the increase in the number of lawsuits against teachers, there has been an increase in the size of settlements (Simpson, 1977). In a study involving 100 Indiana public schools, the mean settlement for lawsuits against schools was $12,240.50 (Fetter and Patton, 1979). It was not uncommon to have had settlements of $100,000 or more, especially where personal injury was involved. "People of today are much more apt to sue educators and educators are exposed to high risk each work day" (Connors,1981). Connors (1981: pp. 1-2) further stated that "educators need to be aware of tort law in order to protect themselves against a variety of lawsuits. And as far as educators are concerned, a tort is any civil wrong, independent of contract, that leads to student injuries (physical, mental, and reputation)."

Teachers have discovered too late that even the seemingly insignificant elements of teaching had far reaching legal implications. Many people trained in education and law felt that "teachers cannot hope to avoid lawsuits until they understand the magnitude of the dangers they face" (Strickland, 1976: p. 13). Lawyers and educators have recommended that teacher preparation programs and inservice education activities should provide legal education to prospective teachers and working teachers. "Colleges of education have a professional and moral obligation to provide adequate instruction in education and the law" (Strickland, 1976: pp. 138-140).

"The courts have said that educators have three major obligations to their students: 1) adequate supervision, 2) proper instruction, and 3) maintenance of equipment" (Connors, 1981: p.10).

A review of the literature highlighted many situations of legal controversy that were divided into four problem areas. They are: 1) teachers' supervisory responsibilities, 2) teachers' duties when using materials and equipment, 3) corporal punishment, and 4) teachers' sources of legal protection (Connors, 1981; Strickland, 1976; Kallen, 1971).

OBJECTIVES

The purpose of this study was to examine the vocational agriculture teachers' knowledge of liability as related to the educational setting. The specific objectives were to:

1. determine the mean score of the Vo Ag teachers by:
    a. educational law training
    b. years of teaching
    c. degree earned

2. identify the major problem areas of liability

3. determine the specific liability questions for the problem areas

4. determine the vocational agriculture teacher's knowledge of liability.

METHODS AND PROCEDURES

All vocational agriculture teachers who participated in the Second General Session of the 1981 Illinois Association of Vocational Agriculture Teachers' Conference were included as the population for this study. The 180 teachers in attendance represented 42 percent of the 438 vocational agriculture teachers in Illinois. Of the 180 vocational agriculture teachers present at the second general session, 148 teachers (82.2%) completed the questionnaire.

The questionnaire was used to gather the data. The liability questions (20) were developed as a result of a literature review, reviewing questionnaires used in other studies, utilizing university educational law personnel, and a practicing lawyer. This review and revision process was used to establish the validity of the questionnaire. The reliability of the questionnaire was determined to be .82. The questionnaire was divided into two sections. Section A gathered data (8 questions) concerned with respondents' characteristics, and Section B contained the 20 questions concerning the four problem areas of liability.

The single-page questionnaire was distributed at the beginning of the Second General Session meeting of the 1981 Illinois Association of Vocational Agriculture Teachers' Conference. Verbal instructions were given in addition to the written instructions included on the questionnaire. The questionnaires were collected at the conclusion of the second general session.

The data were tabulated and summarized. The Statistical Package for the Social Sciences (SPSS) (Nie et al., 1975) was used in the analysis of the data. Means and percentages were computed.

RESULTS

The results of this study are limited to secondary vocational agriculture teachers in Illinois. The liability questions were developed from the legal codes in Illinois as related to the state's educational setting.

Characteristics of the Vo Ag Teachers

The mean age of the teachers was 34.7 years with a range of 20 to 65 years of age. One hundred forty-two (96%) of the teachers were males, and six were females(4%). The teachers had a mean of 11.0 years of vocational agriculture teaching experience with a range from less than one year to 34 years. Only one teacher had experienced a lawsuit. This teacher was found not legally responsible.

The mean score was higher for those teachers who had educational law information which included inservice and/or preservice training. The group mean of the forty-three vocational agriculture teachers who had educational law was 14.41 while the no educational law training group (105 teachers) had a mean of 13.29. The range of correct responses for the twenty liability questions varied from a low of 5 to a high of 19 correct responses. An F-test analysis at the .05 level resulted in F=9.003 which was significant (a t-test with equal N produced the same results).

The mean score for the eighty-three (55%) teachers who had earned a Bachelor's degree was 13.33. The fifty-nine master's degree teachers (40%) mean score was 13.93 and the six advanced certificate teachers (5%) mean score was 14.38. The higher the degree earned the higher the mean score. The difference in mean scores by degree earned was not significant at the .05 level (F=.958).

The mean score of the vocational agriculture teachers (N=88) who had taught 10 years or less was 13.45. Teachers (N=33) with 11 to 20 years of teaching experience mean score was 14.15. Vocational agriculture teachers (N=27) with 21 or more years of teaching experience had a mean score of 13.51. The mean scores by years of teaching vocational agriculture indicated no difference in level of educational law knowledge possessed by the vocational agriculture teachers (F=1.338 at .05 level).

Findings of the Liability Questions

The data gathered concerned the four major problem areas of liability as identified in the review of literature. The problem areas are: teachers' supervisory responsibilities, teachers' duties when using special material and equipment, corporal punishment, and teachers' sources of legal protection.

Table 1 shows the means and percentages of the 20 liability questions. Only four questions had N of less than 148. One teacher failed to answer question 1, and one teacher failed to answer question 13. Question 9 was not responded to by two teachers. Question 20 was lacking 16 responses. Refusal to answer question 9 and 20 may have been due to the absence of an "I am not sure" choice.

TABLE 1

Vocational Agriculture Teachers' Responses to
20 Liability-Related Questions* N=148

Question	Responses	Number/	Percentage Correct
1. In an emergency, the teacher has the legal duty to administer first aid.**	+True	84	56.8
	False	46	
	I am not sure	17	
2. The teacher may punish a student for acts committed off of school property and out of school hours.	+True	22	14.9
	False	115	
	I am not sure	11	
3. Damages awarded against a teacher are limited to the amount of insurance that covers the teacher.	True	5	
	+False	129	87.2
	I am not sure	14	
4. It is the duty of the teacher to provide proper machine guards for shop machinery.	True	122	
	+False	22	14.9
	I am not sure	4	
5. A teacher may be found liable for failure to act to avoid an injury to a student.	+True	142	95.9
	False	0	
	I am not sure	6	
6. A teacher can be held legally liable for punishment that would be reasonable for a normal child but is dangerous because of unknown special physical impairment of the individual.	+True	111	75.0
	False	14	
	I am not sure	23	
7. Safety tests are legally valuable as evidence of a student being knowledgeable of the proper safety procedures.	+True	104	70.3
	False	31	
	I am not sure	13	
8. Use of personal equipment in the school shop presents little legal hazard.	True	10	
	+False	126	85.1
	I am not sure	12	
9. The most frequent basis for litigation against teachers is insufficient or improper:**	Use of equipment/ materials	11	
	+Supervision of students	125	84.5
	Administration of corporal punishment	10	
10. A teacher administering corporal punishment need not have another teacher present.	True	7	
	+False	133	89.9
	I am not sure	8	
11. Teachers, as public employees of the school district, are immune from lawsuits stemming from teaching duties.	True	2	
	+False	144	97.3
	I am not sure	2	

	Questions	Responses	Number/	Percentage Correct
12.	It is the duty of the shop teacher to either maintain the machinery and tools in safe condition, or to report unsafe conditions to the proper personnel.	+True	146	98.6
		False	[illegible]	
		I am not sure	0	
13.	A teacher is not legally required to inform substitute teachers of students with special physical problems or special discipline problems.**	True	22	
		+False	106	71.6
		I am not sure	19	
14.	When administering corporal punishment, the witness should be certified personnel.	+True	109	73.6
		False	22	
		I am not sure	17	
15.	Illinois law does not require a board of education to insure teachers against financial loss from a lawsuit.	True	72	
		+False	43	29.1
		I am not sure	33	
16.	The majority of school accidents involve power machinery.	+True	70	47.3
		False	62	
		I am not sure	16	
17.	If a student leaves the school grounds and is subsequently injured, the school district and the supervising teacher may be held liable.	+True	127	85.8
		False	12	
		I am not sure	9	
18.	When administering corporal punishment, a teacher should give advance warning as to the reason for using that discipline.	+True	129	87.2
		False	3	
		I am not sure	16	
19.	A teacher is protected from liability for damages if the parents of the students have signed a field trip permission slip.	True	22	
		+False	114	77.0
		I am not sure	12	
20.	The minimum dollar limit of liability insurance that the school boards in Illinois must have for each teacher is:**	0 dollars, Illinois law does not require a minimum dollar limit	86	
		+100,000 dollars	31	20.9
		200,000 dollars	15	

*Mean = 68.2 percent correct responses for the sample

**Questions 1, 9, 13, and 20, N does not equal 148. This was due to refusal to answer.

+Correct response.

Teachers' Supervisory Responsibilities

Supervisory questions 1, 5, 9, 13, and 17 had a mean of 78.9 percent correct and a range of 56.8 to 95.9 percent correct response. The supervisory questions and percent correct are shown in Table 2. Although 142 teachers (95.9%) believed the teacher may be found liable for failure to act to avoid an injury to a student, only 84 teachers (56.8%) believed, in an emergency, the teacher has the legal duty to administer first aid.

TABLE 2

Vocational Agriculture Teachers' Number and Percentage of Correct Responses to Five Questions Concerning Teachers' Supervisory Responsibilities
N=148

Supervisory Responsibility Question	Correct Response	Number Correct	Percent Correct
1. In an emergency, the teacher has the legal duty to administer first aid.	True	84	56.8
5. A teacher may be found liable for failure to act to avoid an injury to a student.	True	142	95.9
9. The most frequent basis for litigations against teachers is insufficient or improper:	Supervision of students	125	84.5
13. A teacher is not legally required to inform substitute teachers of students with special physical problems or special discipline problems.	False	106	71.6
17. If a student leaves the school grounds and is subsequently injured, the school and supervisory teacher may be held liable.	True	127	85.8

Mean = 78.9 percent correct responses.

Teachers' Duties Using Materials and Equipment

The problem area of teachers' duties when using materials and equipment is shown in Table 3. The four questions are presented with the number and percent of correct responses. The percent correct for each question within this problem area ranged from 14.9 percent to 98.6 percent. Only 22 teachers (14.9%) stated that "it is the duty of the teacher to provide proper machine guards for shop machinery", while 146 teachers (98.6%) answered that "it is the duty of the shop teacher to either maintain the machinery and tools in safe condition or to report unsafe conditions to the proper personnel."

TABLE 3

Vocational Agriculture Teachers' Number and Percentage of Correct Responses to Four Questions Concerning Teachers' Duties When Using Materials and Equipment N=148

Using Materials and Equipment Question	Correct Response	Number Correct	Percent Correct
4. It is the duty of the teacher to provide proper machine guards for shop machinery.	False	22	14.9
8. Use of personal equipment in the school shop presents little legal hazard.	False	126	85.1
12. It is the duty of the shop teacher to either maintain the machinery and tools in safe condition, or to report unsafe conditions to the proper personnel.	True	146	98.6
16. The majority of school shop accidents involve power machinery.	True	80	47.3

Mean=61.6 percent correct responses.

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Corporal Punishment

Table 4 presented the number and percent of correct responses by the teachers for each question that pertained to corporal punishment. With a range of 14.9 percent correct responses to 89.9 percent correct responses, this problem area had the second highest number and percent of correct responses. Only 22 teachers (14.9%) understood that "the teacher may punish a student for acts committed off of school property and out of school hours." Of the 148 teachers, 133 knew that a teacher administering corporal punishment should have another teacher present.

TABLE 4

Vocational Agriculture Teachers' Number and Percentage of Correct Responses to Five Questions Concerning Corporal Punishment
N=148

Corporal Punishment Question	Correct Response	Number Correct	Percent Correct
2. The teacher may punish a student for acts committed off of school property and out of school hours.	True	22	14.9
6. A teacher can be held legally liable for punishment that would be reasonable for a normal child but is dangerous because of unknown special physical impairment of the individual.	True	111	75.0
10. A teacher administering corporal punishment need not have another teacher present.	False	133	89.9
14. When administering corporal punishment, the witness should be certified personnel.	True	109	73.6
18. When administering corporal punishment, a teacher should give advance warning as to the reason for using that discipline.	True	129	87.2

Mean=68.1 percent correct responses.

Teachers' Sources of Legal Protection

The problem area, "teachers' sources of legal protection" was composed of six questions. Table 5 included the questions that dealt with teachers' sources for each question. The range was 20.9 percent to 97.3 percent correct responses for the individual questions. Only 31 teachers (20.9%) realized that "there was a $100,000 minimum dollar limit that school boards in Illinois must have for each teacher." One hundred forty-four teachers (97.3%) knew that teachers are not immune from lawsuits stemming from teaching duties.

TABLE 5

Vocational Agriculture Teachers' Number and Percentage of Correct Responses to Six Questions Concerning Teachers' Sources of Legal Protection
N=148

Legal Protection Questions	Correct Response	Number Correct	Percent Correct
3. Damages awarded against a teacher are limited to the amount of insurance that covers the teacher.	False	129	87.2
7. Safety tests are legally valuable as evidence of a student being knowledgeable of the proper safety procedures.	True	104	70.3
11. Teachers, as public employees of the school districts, are immune from lawsuits stemming from teaching duties.	False	144	97.3
15. Illinois law does not require a board of education to insure teachers against financial loss from a lawsuit.	False	43	29.1
19. A teacher is protected from liability for damages if the parents of the students have signed a field trip permission slip.	False	114	77.3
20. The minimum dollar limit of liability insurance that the school boards in Illinois must have for each teacher is:	$100,000	31	20.9

Mean=63.6 percent correct responses.

CONCLUSIONS

The conclusions of the study are summarized below:

1. The vocational agriculture teachers answered 68.2 percent of the 20 questions on the questionnaire correctly.
2. There was variation in the percent correct response by problem area. Teachers' duties when using special materials and equipment had the lowest correct response of 61.6 percent and the area of teachers' sources of legal protection correct response was 63.6 percent. The corporal punishment area correct response rate was 68.1 percent. The problem area of liability which teachers seemed to understand the most about was in supervisory responsibilities (78.9 percent correct).
3. There was a large variation in the number of correct responses by question within three of the four problem areas. This included the areas of teachers' duties using materials and equipment, corporal punishment, and teachers' sources of legal protection.
4. Teachers with educational law training scored higher than teachers without law training.

RECOMMENDATIONS

1. Since training helped, special efforts should be made to provide prospective teachers and practicing teachers with current educational law training.
2. New educational law information should concentrate on teachers' duties when using special materials and equipment, teachers' sources of legal protection, corporal punishment, and teachers' supervisory responsibilities because these four areas were found to be where most litigations against teachers occurred.
3. Present educational law training programs should be re-evaluated and restructured so as to provide more complete information because even those teachers that had educational law training had low scores.
4. Further study is needed to determine why the wide range of variance in correct responses within each of the problem areas occurred.

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PERCEPTIONS OF THE VALUE OF EXTENDED SERVICE IN HORTICULTURE

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INTRODUCTION

Extended service contracts have become a touchy subject for many taxonomy areas in vocational agriculture. While the extended service contract/summer program has long been an integral part of vocational agriculture programs, the need for this program is being challenged by superintendents and other educational leaders. With less money available for school systems, superintendents are looking for places to economize and the extended service contract/summer program must be justified to administrators who would trim their budget by eliminating such contracts.

OBJECTIVES

Many studies substantiate the opinion that a summer program is positively related to a good total program (Miller and Parks, 1981; Arrington, 1981; Cepica, 1977; Ford, 1970); however, "the information to date represents opinions of the profession and status reports of what is being done" (AVA Agriculture Education Division Research Committee's Subcommittee on Twelve Month programs, 1979). The purpose of this research was to explore perceptions concerning the value of extended service contracts in horticulture of vocational horticulture students, parents, horticulture industry employers and school administrators. An awareness of what these people perceive can only help vocational agriculture educators better defend extended service/summer programs to the administrators who question its value.

METHODS AND PROCEDURES

Descriptive survey research procedures were followed throughout this study. The 66 Ohio secondary vocational horticulture programs listed in the 1980-81 Ohio Agriculture Education Directory were numbered, and using a table of random numbers, twenty schools were randomly selected. Participants were selected using randomized cluster sampling procedures, with the vocational horticulture programs serving as the sampling units. Instructors at each school were contacted by telephone and asked to participate. A date for a visit to the school was arranged; during this visit, students filled out the questionnaires developed for students and provided the names and addresses of their parents; administrators received a copy of the administrator's questionnaire and a preaddressed stamped return envelope and teachers provided the names and addresses of five, purposely selected employers of their students. Following the school visit, the students' questionnaires were numbered and using a table of random numbers five questionnaires from each school were selected. Similarly, the parents from a school were numbered and five were randomly selected. (Five questionnaires per school were used to eliminate possible skewing of the data by a large number of students in a single program.) The selected parents were mailed a copy of the questionnaire developed for parents, along with an individually typed cover letter and a preaddressed stamped return envelope. All employers received a copy of the questionnaire developed for employers, an individually typed cover letter and a preaddressed stamped return envelope. The four, researcher-developed questionnaires contained 15 to 20, parallel, Likert-scale items and a five-response ranking item. Respondents' answers to the questions were coded and statistically analyzed. Chi-square values were calculated for selected items which corresponded across questionnaires. Correlations were calculated among and between the groups on the item dealing with rank ordering the benefits of the summer program.

RESULTS

Findings

Chi-square analysis was completed for fourteen survey questionnaire items which were parallel across two, three or all four groups (Table 1)

TABLE 1

MEAN RESPONSE OF GROUPS ON SELECTED CORRESPONDING ITEMS

Item	Group	Mean
The vocational horticulture teacher has a summer program of activities (extended service) and is employed beyond the regular school year.	Students	3.04
	Parents	3.00
The teacher makes contacts with community people (business people, leaders, horticulture industry) during the summer.	Students	3.10
	Parents	3.12
	Employers	2.83
Summer FFA activities are an important part of the FFA program.	Students	2.81*
	Parents	3.25
	Employers	3.14
	Administrators	2.75
The teacher updates and repairs school equipment and facilities during the summer.	Students	2.79
	Parents	2.88
	Employers	2.67
	Administrators	2.67

TABLE 1 (Continued)

Item	Group	Mean
I have gained experience and knowledge during the summer program that was impossible to get during the school year.	Students	2.35*
	Parents	3.04
	Employers	3.19
Summer experiences will help (have helped) me be more successful in a job.)	Students	3.04
	Parents	3.28
	Employers	3.00
The summer program is an important part of the vocational horticulture program.	Students	2.91
	Parents	3.00
	Employers	3.28
I received help and support from my teacher when he/she visits me on the job during the summer.	Students	2.49*
	Parents	3.30
	Employers	3.25
My teacher visits me often enough at my summer job.	Students	2.30*
	Parents	2.90
	Employers	2.46
My teacher works with me and my employer in outlining my summer experiences.	Students	2.29
	Employers	3.61
The teacher presents a negative image of the school.**	Students	3.15
	Parents	3.32
	Employers	3.43
The school supports the teacher's summer activities.	Students	2.73
	Parents	3.22
	Employers	2.80
Teachers are allowed to develop their summer program however they see fit.	Parents	2.91*
	Employers	2.73
	Administrators	1.58
The extended service contract (allowing for the summer activities of the teacher) should be continued even if federal/state monies are withdrawn.	Parents	2.84
	Employers	3.00
	Administrators	2.82

*p .10, Chi Square
**Scale values were reversed for negatively stated items.

To obtain the data in Table 2, respondents were asked to rank from 1 (highest) to 5 (lowest) potential benefits students received from having their teacher available during the summer months. The Kendall's Coefficient of Concordance (W) described how the rankings of the groups varied together as .54. This is a substantial correlation among groups. Spearman rank-order correlation coefficients (ρ) are presented in matrix form for between group comparison. The very high correlation between students and parents (.90) would indicate that they vary together in their rankings and that by knowing one, the other could be predicted ($r^2 = .81$).

TABLE 2

MEAN RESPONSE BY GROUP OF RANKED BENEFITS OF THE SUMMER PROGRAM

	Mean*			
Item	Students (n=86)	Parents (n=22)	Employers (n=30)	Administrators (n=12)
one-to-one instruction	2.69	2.36	2.47	1.58
moral support and encouragement	1.91	2.00	2.58	4.25
the continuation of the FFA program	3.77	2.73	3.23	4.00
access to horticultural information	2.84	2.69	3.00	3.75
help in dealing with job related problems	2.88	2.55	2.10	2.33

*Lowest mean would describe the most beneficial aspect of the summer program.

Conclusions

Of the numerous results obtained from the analysis, several were very striking. Parents, vocational horticulture students and employers all responded that the summer program is an important part of the vocational horticulture program, and that summer experiences will help the student be more successful in a job. Activities which all four groups perceived teachers' engaging in included supervising students summer employment, advising summer FFA activities, working with horticulture industry employers, contacting community leaders, and updating and repairing school equipment. Students, however, indicated that they

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receive little help and support from their teacher during their summer placement and that teacher visits were not frequent enough. Employers and parents responded with the opposite view on these items. Students, parents and employers all perceived their schools as supporting the summer program. On the ranking of benefits item, one item consistently and conspicuously ranked low; the continuation of the FFA program ranked fifth for three groups and fourth for the other group. Employers ranked "help in dealing with job related problems" as the most important benefit and students rated this item as the least important benefit.

Another noteworthy result of the analysis of the data was that parents, employers and administrators all responded that the extended service contract should be continued even if federal/state monies are withdrawn.

Recommendations

The groups in this study concurred with the teachers in a 1979 study by Cepica on the importance of the summer program to the overall program. The summer program was viewed as being an important segment of the total program. The use and value of summer FFA activities was ranked low by all groups in this study; yet, teachers were found to be spending much of their summer employment time in FFA activities (Strong, 1973). Williams' study in 1977 found that supervised occupational experiences were not duplicable in the classroom; and the employers, students and parents in this study indicated that the knowledge and experiences gained during the summer program were unobtainable during the regular school year. The employers in this study upheld the results of the Miller and Parks (1981) study of horticulture industry employers that found that the summer experiences were an important facet of the vocational horticulture program.

The data in this study seems to suggest the need for several improvements in the summer program. Knowledge of the summer program, its aims, the summer FFA program, and the teacher's responsibilities appears to be lacking in the groups studied. Communication lines between students, parents, employers and administrators need to be opened so that there is no misunderstanding as to what is to be happening during the summer. Teachers need to be more attentive to on-the-job students, more communicative with the employers, and more sensitive to the perceptions of administrators.

This study of the perceptions of four groups of people involved in the vocational horticulture education process yielded interesting data. Future studies should be conducted on a national level to determine if the Ohio results are unique, and should be expanded to other taxonomy areas. The discrepency between students and employers on job related issues should not be ignored; cooperative training agreements and how they are being used should be further investigated to shed light on this area. The consistant ranking of the continuation of the FFA program as the least important benefit of the summer program also raises some concerns. The perceived value of the FFA program to students of vocational horticulture and the use of FFA in vocational horticulture programs should be investigated. Studies could also include the other relatively new taxonomy areas in vocational agriculture.

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DISCUSSION OF RESEARCH ON NATIONAL ISSUES*

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OVERVIEW

I have found the preparation to discuss the papers to be most challenging. In looking over the critiques presented by discussants in last year's proceedings, I found that there was not a common format or procedure. However, there were helpful features in many of the critiques. The following guidelines were considered in preparing the review: to be constructively critical in pointing out both strengths and weaknesses, to point out alternative implications or alternative approaches, to comment on the procedures and methodology utilized, and to examine the potential for impact to the profession. Overall, the papers were well prepared and the presenters are to be complimented for their efforts.

A NATIONAL SURVEY OF STUDENT MISBEHAVIOR IN AGRICULTURAL EDUCATION by Garrison and Camp

The topic of student misbehavior has received a great deal of discussion in both the popular and the professional press in recent years. This paper made a contribution in focusing on student misbehaviors in agricultural education. The logical follow up would be a study of viable approaches for correcting misbehaviors.

I found this to be a well prepared paper about what appears to be a well conducted study. I would like to cite strengths of the study in terms of the procedures utilized, the careful explanation of the statistics used, the care to select a sufficient sample, the utilization of appropriate statistics including the MANOVA, and the explanation of the statistical analysis. A 72 percent return rate was reported for the study. In addition, a systematic follow up was used to check for differences between respondents and nonrespondents. They should be complimented for including this technique.

Areas which might have improved the paper would include: (1) In the Statement of Objective, it was stated that the objective was "to determine if differences exist in the perceived level of seriousness of their students' behavioral problems." Would it be more appropriate to use the term ascertain? It would seem that when we conduct an investigation, the term ascertain is appropriate. (2) The point was made that one teacher from each of the 50 states was included in the sample although a systematic sampling procedure was used with a random start. More information about the sample of teachers would have been helpful.

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*Presented at the 1982 National Agricultural Education Research Meeting, December 3, 1982, St. Louis, Missouri.

(3) In the discussion of findings, factor one was mentioned prior to the description of the factors. (4) In Table 5, a probability of .000 was reported. I would suspect that the probability was .0001, or some such number. However, it is bothersome to see a table with a 0 probability. Perhaps a footnote would be appropriate in this situation. (5) In examining the items under the heading, Conclusions, I am concerned that we have a mixture of findings restated in a succinct form and of generalizations based on the findings of the study. The latter seem more appropriate as conclusions.

Under Recommendations, there was an observation made that there needs to be greater efforts in motivating younger students. I would hope this would be the case; however, could it be that more of the problem students drop out as they reach an older age and are not in the upper classes? If this is the case, the interpretation for motivation may be important for younger students but these may have other implications for older students and/or dropouts.

Overall, I would like to compliment the authors, Garrison and Camp, on a well conducted and reported study.

POSITIONS HELD BY TEACHERS, TEACHER EDUCATORS, AND STATE SUPERVISORS ABOUT SELECTED NATIONAL ISSUES IN AGRICULTURAL EDUCATION

I would like to compliment Sutphin and Newcomb for attempting a study of an important but difficult topic. Let me also note that I served on the national panel and have followed this study for some time. Therefore, it may be a bit difficult for me to separate previous experience from what was contained in the written paper. This type of study has an opportunity to impact the profession. However, a problem is to reduce into action items the findings related to statements about issues or concerns. Too often they stay in the philosophical realm rather than being translated into action.

Strengths were related to the procedures and discussion of the study. The Delphi approach was utilized for this study. This would seem to be the most appropriate approach to use in obtaining reactions about issues on a national basis. The approach for the collection of data seemed appropriate and was carefully described. The selection and rating of the juries by the outside parties was an appropriate strength. The three professional groups of agricultural educators were involved in the study. Although the total response rate during the last round was 82 percent of the first round, it was indicated that the coded questionnaires were checked to see if there was a nonrespondent bias. The reporting of this check was helpful to the reader.

The concerns for improving the paper likely reflect the difficulty of reporting on this type of study. Overall, a great deal of data were presented in a six page table. It would have been helpful to the reader had they found a way to more succinctly present the findings. This statement may be judged to be contrary to other concerns where more data have been requested. The most appropriate approach might have been to might have been to present the data in an appendix to the paper but to have a more succinct presentation in the findings. It was indicated that mean scores were used to prioritize issues in terms of perceived need for further study. However, I did not find how this was handled. It would have been helpful to the reader to have more detail.

Conclusion four stated that "A pool of experts can be identified who possess the necessary experience and knowledge and are willing to address the question of what should be with respect to major issues in agricultural education." While this may be an outcome of this study, it seems to me that this was also an assumption that was made prior to conducting this type of study.

The last recommendation focused on additional items for study. The profession has much to gain if this call for additional research related to important issues in agricultural education is continued.

A COMPARISON OF AGRICULTURAL EDUCATION PROGRAMS LOCATED IN COLLEGES OF AGRICULTURE WITH THOSE LOCATED IN COLLEGES OF EDUCATION: AN IMPERICAL STUDY

Peters and Moore have gathered data about a subject that has been debated and written about for some time in agricultural education. The problem with an imperical study on this subject would seem to relate to the fact that the climate of the institution and the political influences involved within the institution are difficult to document on paper. These factors may be equally important to the factors which were quantifiable. The major strength of the study would relate to the fact that it was a national study involving all programs in agricultural education. The findings and discussion were helpful to reader. The researchers should be complimented on attempting to quantify items related to an often debated professional topic.

Areas which might improve the report focus on various details of the study. The authors indicated that by collecting data, it was possible to determine in which administrative unit departments of agricultural education are faring the best. Perhaps to ascertain would have been the more appropriate term. It was also indicated that data were gathered by a researcher developed questionnaire. It would have been helpful to have had information concerning the development of the questionnaire and what was done to check on the validity and reliability of the instrument. The analysis used involved descriptive statistics and T-tests. In examining the variables without benefit of a correlation, it is difficult to be precise; however, it would seem that some of these variables might have been related. If this was the case, then an approach of looking at the variables via MANOVA might have been a more appropriate analysis for these data.

It would have been interesting to have had the data sorted and reported in terms of land-grant institutions and other institutions inasmuch as other sortings were used. The data reported on budgets over which the head of agricultural education has control and was difficult to interpret. From the range of dollars involved, it would seem that there is a great deal of difference among departments. A more definitive approach in terms of types of budget might have yielded different results.

This study found no differences; however, it was noted earlier that there were limitations in terms of the political and institutional climate in which these programs operate. Therefore, I would caution the reader to interpret rather carefully the last statement suggesting that the terms were "tipped" in one direction.

SUMMARY

Overall, the papers each examined an area of concern to our profession. The authors are to be complimented for their efforts in conducting and reporting the research.

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A NATIONAL SURVEY OF STUDENT MISBEHAVIOR IN AGRICULTURAL EDUCATION

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A NATIONAL SURVEY OF STUDENT MISBEHAVIOR IN AGRICULTURAL EDUCATION

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INTRODUCTION

Student misbehavior has been a concern of educators for many years. According to Lucas, (1972, p. 24) as long as 3000 years ago schoolmasters would "cane" boys for being late to school. Today, student behavioral problems appear to be as prevalent as they always have been. The thirteenth annual Gallup Poll of public attitudes on education reported that "discipline continues, as it has for many years, to be regarded as the number one problem facing the local public schools" (Gallup, 1981, p. 34).

Literally thousands of articles have been written which give suggestions on how to handle student behavioral problems. More articles appear almost daily both in the popular press and professional literature discussing causes as well as solutions of student behavioral problems. However, there is little current research on the precise nature of student misbehavior in the public schools. This article reports a national survey of vocational agriculture teachers which sought to measure their perceptions of the seriousness of student misbehavior in their classrooms and laboratories (Garrison, 1982).

OBJECTIVES

The primary objective of the study was to determine the level of seriousness with which vocational agriculture teachers view their student behavioral problems. The second objective was to determine if differences exist in the perceived level of seriousness of their students behavioral problems among vocational agriculture teachers grouped by:

1. degree held
2. sex of teacher
3. grade level taught
4. years of teaching experience
5. region of country
6. setting of school (central city, urban, urban fringe, rural)
7. school size
8. size of department (single teacher or multi-teacher).

Null hypotheses were developed to address each of the biographical and situational variables listed under the second objective.

The population consisted of the 12,726 vocational agriculture teachers listed in the 1981 Agriculture Teachers' Directory. A systematic sampling procedure with a random start was used to select teachers for inclusion in this study. A sample size of 373 was determined to be appropriate for a population of 12,726, according to Krejcie and Morgan (1970, p. 608), assuming a 5 percent error rate with a 95 percent confidence level. However, for the purposes of this study the sample size was increased to 604 to facilitate the factor analysis procedures on the instrument. Assuming a return rate of 65 percent, and a requirement of at least five responses times the number of items (86) on the instrument, as specified by Hair (1979, p. 219), a sample size of 604 was determined to be appropriate. At least one teacher from all 50 states was included in the sample.

A questionnaire was used to collect data from the sample. The questionnaire consisted of two parts: (1) a biographical data section designed to collect personal, professional, and situational data needed for the analyses specified under the secondary objective, and (2) the Student Misbehavior Survey (SMS) by Camp (1981). The SMS is a comprehensive list of 86 specific and non-duplicating student misbehaviors. It is a revision of Camp's Survey of Student Discipline Problem Behaviors, copyright 1979, Purdue Research Foundation.

The following is an extract of the instructions and explanation of the 5-point Likert type rating scale used on the SMS:

> SERIOUSNESS OF BEHAVIOR
>
> Although some of the listed behaviors may be very grave, they occur so infrequently that they present no real problem in your classroom or school. On the other hand, some very trivial misbehaviors may cause serious problems because of their frequency. Please rate each behavior according to how serious a problem it actually creates in your duties as vocational agriculture teacher. Use the following scale:
>
> 0 - NOT A PROBLEM (never observed or so unimportant it is not a problem to me)
> 1 - MINOR PROBLEM (presents no real problem to me)
> 2 - MODERATE PROBLEM (presents somewhat of a problem to me)
> 3 - MAJOR PROBLEM (presents a serious problem to me)
> 4 - CRITICAL PROBLEM (causes an extreme problem to me)

The questionnaire was mailed with a cover letter in January 1982. A follow-up postcard reminder was mailed to non-respondents three weeks later, followed by a second mailing of the instrument one week later. There were 437 usable responses for a 72 percent usable return rate. Subsequent telephone follow-ups showed no systematic differences between remaining non-respondents and respondents.

All data were analyzed using the programs provided in the Statistical Package for the Social Sciences (Nie, et al., 1975) and the SPSS Update 7-9 (Hull and Nie, 1981). Common factor analysis with varimax rotations

(Child, 1970) combined with scree test procedures (Cattell, 1978, pp. 76-78) were used to determine the underlying misbehavior factors on the instrument. After the underlying factors were isolated, multivariate analysis of variance (MANOVA) was used to test for significance using weighted factor scores as multiple dependent variables, compared across the levels within each biographic and situational variable. The analysis of variance (ANOVA) procedure was used when significance was found in the MANOVA for a given biographical or situational data set. When significant differences in the ANOVA were observed the Scheffe' post-hoc multiple comparisons test was used to identify the specific sources of significant differences. This procedure avoids the weakness of multiple-t testing as pointed out by Oliver (1981). Pearson Product-Moment correlation was used to test for a relationship between teacher years of experience and total seriousness score.

In all cases an alpha level $p < .05$ was used for rejection of the null hypothesis.

FINDINGS

Sample means were computed for each item on the survey. The student misbehavior with the highest mean seriousness rating was ambivalence (doesn't care attitude) followed by failing to bring books, paper, and pencil. Examination of the data revealed that only those 2 items had mean ratings of 2.0 or above (2.0 on the scale represented a moderate problem to the responding teacher). The misbehavior with the lowest mean seriousness rating was rape (actual or attempted). The median item rating was 0.97 (note that 1.0 represents a minor problem). The clear implication of this is that virtually no student misbehavior represented more than a moderate problem to the responding agriculture teachers and that most were viewed as not even being minor problems.

The scree test (Cattell, 1978, pp. 76-78) was used to determine the number of underlying constructs or factors to retain for subsequent reduction of the data through a varimax rotation procedure. This procedure resulted in three factors retained for further analysis. The three retained factors were named based on the items most heavily loading on each as follows: Factor I, student attitude; Factor II, violence related; and Factor III, use of drugs. There were 52 variables loading on Factor I, 23 variables loading on Factor II, and 10 variables loading on Factor III. Only one variable failed to load on any of the three factors retained in this analysis. A loading of .30 or greater was considered to be sufficient to indicate that a variable was loaded on a given factor (Child, 1970, p. 46). Where a variable loaded on more than one factor, the highest loading was considered to be the factor to which the variable belonged (Child, 1970, pp. 32-3).

An examination of the 10 items receiving the highest perceived seriousness ratings (see Table 1), shows that all 10 appear under Factor I, student attitude. Conversely, an examination of Table 2 shows that all 11 of the student misbehaviors viewed as presenting the least serious problems fall into Factor II, violence related.

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Table 1
The Ten Most Serious Student Misbehaviors Ranked by Mean Scores as Perceived by Vocational Agriculture Teachers

Rank	Misbehavior	Factor	Mean Score[a]
1	Ambivalence (doesn't care attitude	I	2.133
2	Failing to bring books, paper, pencil, etc.	I	2.043
3	Negative attitude toward school	I	1.927
4	Talking without permission	I	1.851
5	Not following instructions	I	1.773
6	Making and leaving a mess	I	1.732
7	Clowning/foolish behavior	I	1.659
8	Failing to do in-class assignments	I	1.547
9	Smoking/chewing tobacco in any form	I	1.538
10	Interfering with work of others	I	1.532

[a] 0=Not a problem, 1=Minor problem, 2=Moderate problem, 3= Major problem, 4=Critical problem

Table 2
The Eleven Least Serious Student Misbehaviors Ranked by Mean Scores as Perceived by Vocational Agriculture Teachers

Rank	Misbehavior	Factor	Mean Score[a]
76.5	Threatening school employees	II	0.229
76.5	Socially delinquent behavior (indecent exposure, etc.)	II	0.229
78	Striking school employee	II	0.130
79	Injuring self (intentional)	II	0.089
80	Protests, political	II	0.085
81	Homosexual activity	II	0.080
82	Masturbation	II	0.076
83	Picketing or strikes by students	II	0.073
84	Homicides (attempted or actual)	II	0.055
85	Student political activism (underground newspapers, agitation, etc.)	II	0.048
86	Rape (attempted or actual)	II	0.046

[a] 0=Not a problem, 1=Minor problem, 2=Moderate problem, 3=Major problem, 4=Critical problem

Factor scores were computed for each participant across all three factors and factor score means were then computed. The resulting factor score means were then analyzed for significant differences across the levels of each independent variable using first MANOVA procedures and then ANOVA procedures when significance was found on the MANOVA. Only those variables producing significant MANOVA differences will be reported here.

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The MANOVA across factor-mean scores and across grade-levels taught produced a Wilks' Lambda of 0.961, which was significant. Each factor score was then compared across grade levels by use of ANOVA procedures. Table 3 contains the ANOVA summary for the grade levels taught by vocational agriculture teachers. The source of significance on the MANOVA lay in Factor I, student attitude as indicated by the F value of 6.029. This, followed by Scheffe' comparisons indicated that combination junior-senior high school vocational agriculture teachers perceived student attitude problems to be more serious than did vocational agriculture teachers in senior high schools.

Table 3
ANOVA Summaries of Factors Across Grade Levels Taught

Factor	SS	MS	F Value	Prob. of F
1. Student attitude	11.235	5.617	6.029	.003
2. Violence related	1.393	.696	.757	.470
3. Use of drugs	2.154	1.077	1.311	.271

The MANOVA across factor-mean scores by geographic regions, as defined by NVATA boundaries, produced a Wilks' Lambda of 0.922 which was significant. Subsequent ANOVA computations for each factor mean score across geographic regions are summarized in Table 4.

Table 4
ANOVA Summaries of Factor Scores Across
Regions of the County

Factor	SS	MS	F Value	Prob. of F
1. Student attitude	8.854	1.771	1.878	.097
2. Violence related	3.020	.604	.651	.661
3. Use of drugs	17.677	3.535	4.325	.001

As indicated by the F of 4.325, the source of significance lay in Factor III, use of drugs. The Scheffe' post-hoc multiple comparisons test revealed that significant differences existed between NVATA Region 1 and Region 4. Comparisons of mean scores indicated that teachers in Region 4 perceived student use of drugs to be a less serious problem than did teachers in Region 1.

The MANOVA for factor-mean scores by school size produced a Wilks' Lambda of 0.963, which was significant. Subsequent ANOVA computations are summarized in Table 5. The F of 8.027 for Factor III was significant, indicating that the source of significance on the MANOVA was in this factor. The Scheffe' post-hoc multiple comparisons test revealed significant differences as follows: mean scores of teachers in both schools of under 1000 and of 1000-2000 perceived student use of drugs to be a less serious problem than did teachers in schools with enrollments of over 2000.

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Table 5
ANOVA Summaries of Factors Across School Sizes

Factor	SS	MS	F Value	Prob. of F
1. Student attitude	.074	.037	.038	.962
2. Violence related	.220	.110	.118	.888
3. Use of drugs	13.160	6.580	8.207	.000

The correlation between teacher years of experience and each of the three factor mean scores was computed. Of the three, only one correlation was significant. The correlation between years of experience and the student attitude factor was -0.20. While this correlation was significant and was in the expected direction, such a small negative correlation accounts for very little of the variance and can be considered to be of little practical value.

MANOVA's calculated for the following independent variables were not significant: setting of school, educational level of teacher, and sex of teacher.

CONCLUSIONS

The findings of this study warrant the following conclusions regarding the seriousness of student misbehavior as perceived by vocational agriculture teachers in public schools in the United States.

1. Student attitude problems are perceived by vocational agriculture teachers, to be more serious than other types of student behavioral problems.

2. Relatively severe or grievous types of student misbehaviors, such as rape, assaults on school personnel, use of hard drugs, and selling drugs, present little or no problem to teachers of agricultural education.

3. Senior high school teachers of vocational agriculture perceive student attitude problems to be less serious than do vocational agriculture teachers who work with younger students.

4. Vocational agriculture teachers in NVATA Region 1 perceive use of drugs to be a more serious problem than do teachers in NVATA Region 4.

5. Vocational agriculture teachers in schools of over 2000 enrollment perceive use of drugs to be more serious than do teachers in schools with enrollments of less than 2000.

6. Problems with student attitude seem to diminish somewhat as the number of years of teaching experience increase.

7. George Gallup and many others notwithstanding, student misbehavior does not appear to be a major problem for vocational agriculture teachers, in general.

RECOMMENDATIONS

1. Teacher preservice programs should place more emphasis on techniques for stimulating student interest and improving student attitudes.

2. Undergraduates who are bombarded with pollster rhetoric and media exaggeration should be reassured that they are not likely to face the kinds of extreme student misbehaviors of which many of them seem so apprehensive.

3. Prospective and beginning teachers should be made aware that student attitude problems appear to be somewhat more extreme in younger students. Greater efforts at motivation may be necessary with such younger students.

4. Teachers in Region 1 and in particularly large schools throughout the country should be made aware of the relatively more serious drug and drug-related problems in schools such as theirs.

5. Research should address the question of why more experienced teachers seem to have fewer and less severe student misbehavior problems.

6. This study should be replicated across service areas to determine the nature of the student misbehavior problems facing other vocational teachers.

7. This study should be replicated periodically to determine if the nature of the student misbehavior problem facing agricultural education teachers is changing overtime.

8. This is good news and it should be shared. Far too much excitement is generated by media attention to student violence in the schools.

A FINAL OBSERVATION

We now have, for the first time, definitive data describing the nature of the student misbehavior problem facing vocational agriculture teachers on a national basis. Teacher pre-service and in-service education programs which address student behavior management techniques can deal with those student misbehaviors which teachers perceive to cause the most serious problems. Prospective teachers can be reassured that the student misbehaviors which are likely to cause them the most serious problems are relatively minor in nature and are not as dangerous or severe as the popular press would have us believe.

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POSITIONS HELD BY TEACHERS, TEACHER EDUCATORS, AND STATE SUPERVISORS ABOUT SELECTED NATIONAL ISSUES IN AGRICULTURAL EDUCATION

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Throughout the history of agricultural education feasible alternative positions pertaining to important issues in the profession have been identified, studied, and discussed (Gregory, 1929; Stenzel and Wall, 1973; Stimson and Lathrop, 1942; True, 1929). Scarborough (1980) and Swanson (1980) suggested that a continuous study and discussion of significant issues is important to the advancement of agricultural education. Lee (1977) stated that a consideration of the issues "stimulates professional discussion and enrichment" (p. 2). The profession has recently intensified efforts to critically consider priority issues affecting the future of agricultural education.

Thirty-two priority issues affecting agricultural education for the remainder of the 20th Century were identified during the National Agricultural Education Seminar held in Kansas City, Missouri July 15-17, 1980 (National Agricultural Education Seminar, 1980). Warmbrod (1974) proposed that feasible alternatives concerning an issue under discussion should be formulated and tested. This same logic appears to be applicable to the priority issues currently challenging agricultural education.

PURPOSE OF THE STUDY

The primary purpose of this study was to ascertain the extent to which alternative positions on nine selected issues in agricultural education in the public school system were acceptable to selected agricultural education teacher educators, secondary teachers, and state supervisors. The specific research questions were:

1. What are the alternative positions on the selected issues?
2. What is the extent of acceptance of the alternative positions?
3. What are the perceptions regarding the importance of further study and discussion of the issues?

PROCEDURES

The researchers purposefully selected and described nine issues in agricultural education concerning the areas of program purpose, clientele

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served, program content, supervised occupational experience, the FFA, and program title. These issues were derived from "prioritized issues" identified during the National Agricultural Education Seminar in Kansas City, Missouri, July 15-17, 1980.

Three techniques utilized in the study included (1) a review of related literature, (2) review and refinement of issue and position statements by a jury of experts, and (3) a modified-Delphi technique to ascertain the extent of agreement with the position statements and the need for further study.

The researchers reviewed related literature to identify and describe alternative positions pertaining to each of the nine selected issues. Each issue and alternative position statement was then prepared in instrument format for review and refinement by a jury of seven experts. During this process jury members could suggest alternative position statements, or delete/modify positions as stated. Jury members were selected by an independent third party with their expert status verified by self-ratings. A list of 79 alternative position statements formulated from the process answered the research question, "What are the alternative positions on the selected issues?" The review and refinement also provided for the collection of essential data needed to formulate a Delphi instrument.

The Delphi technique elicits perceptions from respondents who make a series of judgments, each successive one being made in the light of a summary of judgments of all participants on a previous questionnaire (Sweigert, 1975). Features of the Delphi including anonymity of individual responses, controlled feedback, and a defined statistical presentation of group responses (MacMillan, 1975) facilitates convergence toward a particular viewpoint while preserving minority viewpoints and controlling for the "bandwagon" effect.

Respondents for the Delphi process were identified from a pool of 146 prospective individuals considered to be expert with regard to the research question. Presidents of all state agriculture teacher associations were asked to nominate an expert teacher from their state from which forty-six useable responses were received. Fifty teacher educators were nominated independently by the President, President-Elect, and the two immediate Past Presidents of the American Association of Teacher Educators in Agriculture. Head State Supervisors were selected by virtue of their position.

The Delphi panel of 104 subjects with sufficient distribution among teachers, teacher educators and state supervisors was confirmed from response to a mailing containing (1) an invitation to participate, (2) an expert status self-rating form, and (3) the first questionnaire. Response to the second and third questionnaires used in the Delphi process included 94 or 90.4 percent and 86 or 82.7 percent of the 104 first round panelists. Twenty-three teachers, 37 teacher educators, and 26 state supervisors completed all three questionnaires. The coded questionnaires of non-respondents were checked to determine that convergence to any particular viewpoint could not be attributed to respondent drop-out.

A modified Delphi technique which employed a series of three successive questionnaires was deemed most appropriate to determine the extent of acceptance of alternative positions and to determine the importance of further study and discussion of the issue. The first questionnaire of the Delphi process contained the list of 79 positions which were developed by the researchers and the jury. Respondents were asked to (1) agree or disagree and (2) comment on each alternative position. The second questionnaire contained the same elements as the previous instrument and, in addition reported to each respondent (1) the percent of panelists in agreement and disagreement with each position statement, (2) how the particular respondent voted on the previous questionnaire, and (3) a summary of the comments concerning each alternative position which were provided by round one respondents. Subjects were asked to consider the new information and to reevaluate their stance on each alternative position using the same process identified for the first questionnaire. A third questionnaire was identical in format and process to the second questionnaire with one addition. Panel members were asked to indicate their perception of the need for further study and discussion of each issue by checking a four-point rating scale with the descriptors "very important," "important," "limited importance," and "no further study needed." Round three data were tabulated and summarized.

POSITIONS WITH REGARD TO IMPORTANT ISSUES IN AGRICULTURAL EDUCATION

Seventy-nine alternative positions pertaining to nine selected issues in agricultural education were identified. Table 1 lists the position statements pertaining to each of the nine selected issues.

EXTENT OF ACCEPTANCE OF ALTERNATIVE POSITIONS BY EXPERT AGRICULTURAL EDUCATION TEACHERS, TEACHER EDUCATORS AND STATE SUPERVISORS

The extent of acceptance on the alternative positions among teachers, teacher educators, and state supervisors was determined by the percent of agreement among the expert Delphi panelists. Out of the seventy-nine positions, all panelists agreed with 18 or 22.8 percent of the statements while all panelists disagreed with 5 or 6.3 percent of the positions. Forty-five or 57 percent of the positions were supported by 95 percent or more of the panelists.

The variability among teachers, teacher educators, and state supervisors on the percent of agreement on the positions was determined by the range. The range among the three groups was less than 5.0 percent on 39 positions, or 49.4 percent of the positions. Five, or 6.3 percent of the positions had a range among teachers, teacher educators, and state supervisors equal to or greater than 25.0 percent. Table 1 lists the position statements with the percent of agreement among all panel members and by groups of teachers, teacher educators, and state supervisors.

Table 1

POSITIONS ORDERED BY THE PERCENT OF ACCEPTANCE AMONG EXPERT PANEL MEMBERS

Issue/Position	N	Percent Agreement Teachers	Teacher Educators	State Supervisors	Total
Purpose of Agricultural Education					
Orientation and Exploration	86	100	100	100	100
Preparation for Employment or Self-Employment	86	100	100	100	100
To Develop the "Total Individual"	84	100	100	100	100
Up-grading and retraining	85	95.7	97.3	100	97.6
Preparation for Advanced Study at the Post-Secondary Level	86	95.7	97.3	92.3	95.3
Preparation for Advanced Study at the Baccalaureate Level	86	69.6	91.9	88.5	84.9
Develop the Abilities of Individuals to be Intelligent Consumers	86	73.9	78.4	61.5	72.1
General Education of an Avocational Nature	86	39.1	43.2	26.9	37.2
Clientele Who Should be Served by Agricultural Education					
Students in Grades 9-10	86	100	100	100	100
Rural Students	85	100	100	100	100
Urban Students	85	100	100	100	100
In-School Youth with Social, Physical, and Economic Handicaps	84	100	100	100	100
Students in Grades 11-12	86	100	97.3	100	98.8
Suburban Students	84	100	97.2	100	98.8
Females	84	100	100	96.0	98.8
Adults Seeking Employment in Occupations Requiring Knowledge and Skill in Agriculture	86	91.3	97.3	96.2	95.3
Out-of-School Youth	86	87.0	100	92.3	94.2
Out-of-School Youth and Adults With Social, Physical, and Economic Handicaps	84	52.2	91.7	88.0	79.8
Students in Grades 7-8	86	69.6	81.1	65.4	73.3
Out-of-School Youth or Adults Who Desire Knowledge and Skill in Agriculture for Personal Reasons	86	65.2	56.8	50.0	57.0
Students in Grades K-6	85	52.2	37.8	52.0	45.9

Table 1 Cont'd.

Issue/Position	N	Percent Agreement Teachers	Teacher Educators	State Supervisors	Total
Content of Agricultural Education					
Agricultural Production	86	100	100	100	100
Agricultural Supply and Service	76	100	100	100	100
Agricultural Mechanics	86	100	100	100	100
Agricultural Products	83	100	100	100	100
Ornamental Horticulture	81	100	100	100	100
Horticulture	81	100	100	100	100
Renewable Natural Resources	85	100	97.3	100	98.0
Forestry	85	95.5	97.3	100	97.6
Other Types of Agriculture	85	95.5	97.3	96.2	96.5
Clientele Who Should Be Required to Conduct Supervised Occupational Experience/Practice Programs					
All Vocational Students Enrolled in a Production Agricultural Course of Study	86	95.7	100	100	98.8
All Vocational Students Enrolled in a Nonproduction Agriculture Course of Study	86	95.7	97.3	100	97.7
Students Enrolled in Classes for Orientation to Agriculture Such as in Grades 7 and 8	84	27.3	22.2	23.1	23.8
Students Enrolled in Non-Vocational Agricultural Education Programs	85	26.1	25.0	19.2	23.5
Students Receiving Agricultural Instruction in Grades K-6	83	9.1	8.3	20.0	12.0
Acceptable Types of Supervised Occupational Experience/Practice for Students Enrolled in a Production Agricultural Program					
Supervised Farming Projects (Enterprises)	84	100	100	100	100
Projects of an Entrepreneurial (Ownership) Nature	86	100	100	100	100
Projects Related to the Specialty Area in Which the Student is Enrolled	85	95.7	100	100	98.8
Farm Placement	86	100	100	96.2	98.8
Practice/Experience in the School Laboratory, on the School Grounds, or Farm Separate from Scheduled In-School Instruction	86	100	100	96.2	98.8
Cooperative Education Programs	86	95.7	97.3	100	97.7
Home and/or Farm Improvement Projects	86	100	100	88.5	96.5
Supplementary Farm Projects	86	100	100	88.5	96.5

Table 1 Cont'd.

Issue/Position	N	Percent Agreement Teachers	Teacher Educators	State Supervisors	Total
Group Projects Related to Production Agriculture	86	100	94.6	92.3	95.3
Exploratory Experiences	85	73.9	75.7	80.0	76.5
Practice/Experience in the School Laboratory, on the School Grounds, or Farm During Class Time	86	69.6	59.5	76.9	67.4
Acceptable Types of Supervised Occupational Experience/Practice for Students Enrolled in Non-Production Agriculture					
Placement in Agribusiness	86	100	100	100	100
Projects of an Entrepreneurial (Ownership) Nature	86	100	100	100	100
Cooperative Education Programs in Agriculture	86	95.7	97.3	100	97.7
Projects Related Exclusively to the Specialty Area in Which the Student is Enrolled	86	91.3	97.3	100	96.5
Practice/Experience in the Laboratory, on the School Grounds, or Farm Separate From Scheduled In-School Instruction	86	95.2	97.3	96.2	96.5
Group Projects of a Non-Production Agriculture Nature	84	95.2	94.6	96.2	95.2
Home Projects of Non-Production Nature	86	100	91.9	84.6	91.9
Exploratory Experience	86	73.9	78.4	76.9	76.7
Practice/Experience in the Laboratory, On the School Grounds, or Farm During Class Time	86	60.9	54.1	80.8	64.0
Clientele Enrolled in Agricultural Education Who Should be Members of the FFA					
All Vocational Students in Production Agriculture	86	95.7	97.3	92.3	95.3
All Vocational Students in Non-Production Agriculture	86	95.7	97.3	92.3	95.3
Avocational Students	85	43.5	44.4	19.2	36.5
Vocational Students in an Orientation to Agriculture Course of Study such as 7th and 8th Grade Programs	85	26.1	33.3	19.2	27.1
Only Those Vocational Students Who Desire to Become Members	85	26.1	22.2	23.1	23.5
Aspects of the FFA Program Which Should Occupy in-Class Instructional Time					
Activities Specifically Selected to Develop Leadership, Citizenship, and Cooperation	85	100	100	100	100

Table 1 Cont'd.

	Percent Agreement				
Issue/Position	N	Teachers	Teacher Educators	State Supervisors	Total
Selected FFA Activities Which Directly Relate to the Specialty Area of Instruction	86	100	94.6	96.2	96.5
Selected FFA Activities Which Can be Utilized Without Taking Time Needed to Teach Content of the Instructional Program	86	100	89.2	100	95.3
Record Keeping for Individual and Chapter Awards	86	100	89.2	100	95.3
Fund Raising Projects Which Use Minimal Class Time That Relate to Agriculture, Have Educational Value, and are Conducted According to Sound Business Practices	86	100	83.8	100	93.0
FFA Activities Which May Not Directly Relate to the Specialty Area in Which the Student is Enrolled	86	91.3	86.5	100	91.9
Preparation for Judging Contests Related to the Specialty Area in Which the Student is Enrolled	86	100	86.5	92.3	91.9
Planning Any FFA Activity	86	82.6	78.4	92.3	83.7
Preparation of Individual Award Applications	86	87.0	54.1	80.9	70.9
Conducting Any FFA Activity in the Chapter Program of Activities	86	52.2	45.9	69.2	54.7
Preparation for Any Judging Contest	86	43.5	18.9	53.8	36.0
The Title Which Should be Used to Describe Agricultural Education Programs					
Vocational Agriculture	85	56.5	67.6	52.0	60.0
Vocational Agriculture/Agribusiness	85	39.1	16.2	32.0	27.1
Agricultural Education	85	4.3	16.2	16.0	12.9
Agriculture/Agribusiness/Natural Resources Education	85	0.0	0.0	0.0	0.0
Vocational-Technical Education in Agriculture	85	0.0	0.0	0.0	0.0
Agricultural Education and Renewable Natural Resources	85	0.0	0.0	0.0	0.0
Agricultural and Natural Resources Education	85	0.0	0.0	0.0	0.0
Agriculture/Agribusiness Education	85	0.0	0.0	0.0	0.0

NEED FOR FURTHER STUDY AND DISCUSSION OF SELECTED ISSUES IN AGRICULTURAL EDUCATION

Mean scores were used to prioritize the issues in terms of perceived need for further study and discussion. The issues most in need for further study and discussion dealt with clientele who should be members of the FFA, type of supervised occupational experience/practice needed by non-production and production agriculture students, and the purpose of agricultural education with mean scores of 2.60, 2.58, 2.53, and 2.53 respectively. Clientele who should conduct supervised occupational experience/practice and appropriate clientele for agricultural education followed with mean scores of 2.49 and 2.43 respectively. Mean scores of 2.29, 2.16, and 1.78 were calculated for the issues dealing with in-class time for FFA activities, program title, and content of the program to form the seventh, eighth, and ninth priority ranks respectively.

CONCLUSION

The following conclusions were drawn from the analysis and interpretation of the data in the study:

1. Expert teacher educators believed that a broader range of clientele were acceptable for FFA membership than did expert secondary teachers and state supervisors.

2. Expert teacher educators were less willing to accept aspects of the FFA program as in-class activities than were secondary teachers and state supervisors.

3. The extent of consensus on a majority of the positions is very high among the experts in agricultural education. Yet, some of the experts supported some modifications or additions to the positions as stated through written commentary.

4. A pool of experts can be identified who possess the necessary experience, and knowledge and are willing to address the question of "what should be" with respect to major issues in agricultural education.

5. Through dialogue and discussion, agricultural education secondary teachers, teacher educators, and state supervisors will move toward consensus on important positions which pertain to major issues in agricultural education.

6. The issues in greatest need of further study and discussion include clientele who should become FFA members, acceptable types of supervised occupational experience/practice for non-production and production agriculture students, and the purpose of agricultural education in the public school system.

RECOMMENDATIONS

1. The agricultural education profession should consider developing a general philosophy with regard to major components of the agricultural education program applicable throughout the United States, while maintaining appropriate flexibility for local program adaptations.

2. The professional associations should consider providing continuing leadership to studying, discussing, and identifying acceptable positions of the profession with regard to important issues in agricultural education at the national, state, and local levels.

3. The joint staff of teacher educators and state supervisors in each state should consider formulating positions which specifically address issues important to the future of agricultural education in the respective states.

4. The agricultural education profession should develop specific efforts to continually study, discuss, and identify positions concerning important issues in agricultural education such as devoting space for articles in the professional publications and appointing committees through the Agricultural Education Division of AVA to address specific issues.

5. Graduate and undergraduate students should utilize issue and position statements as focal points for discussion and further study.

6. Replication of this study or components of this study should be conducted periodically to (a) identify trends and (b) provide considerations for determining future direction in the agricultural education profession.

7. Issues important to agricultural education, in addition to those in this study such as prioritized issues from the National Agricultural Education Seminar, should be studied according to methodology employed in this research.

8. Future researchers should consider panelists' written commentary in this study to identify additional positions and to sharpen the focus of those positions already identified in this research.

9. Further research concerning the issues addressed in this study should focus on those issues receiving the highest priority ranking.

10. Where there is a large amount of variability among teacher educators, secondary teachers, and state supervisors concerning the acceptance of a position, such as "out-of-school youth and adults with social, physical, and economic handicaps;" "preparation for any judging contest;" "preparation of individual award applications;" and, "practice/experience in the laboratory, on the school grounds, or farm during classtime," further study and discussion is recommended.

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A COMPARISON OF AGRICULTURAL EDUCATION PROGRAMS LOCATED IN COLLEGES OF AGRICULTURE WITH THOSE LOCATED IN COLLEGES OF EDUCATION

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INTRODUCTION

Agricultural Education Departments have historically originated within Colleges of Agriculture in most land-grant institutions and a few prominent state universities. Today, however, one finds agricultural education departments located administratively in a number of areas, most prominent of which are Colleges of Agriculture and Colleges of Education. Within the past ten years discussions have taken place both formally, such as the Binkley-Knebel debate in The Journal of the American Association of Teacher Educators in Agriculture in November 1977, and informally among various Agricultural Education faculties concerning where Departments of Agricultural Education at the university level should be located. Binkley and Knebel debated its location presenting arguments both for and against the College of Agriculture and the College of Education. Moore and Farrington (1974) called for the consolidation of all vocational teacher education faculties within a College of Education.

Most of the points presented in these articles are primarily theoretical or philisophical in nature. There is virtually no discussion of which type of administrative unit provides the more favorable climate for the continued nurturance and growth of Agricultural Education. The question, "Where do Departments of Agricultural Education fare best - within the College of Agriculture or within the College of Education?" has not been addressed. The research in this paper focuses upon this question.

STATEMENT OF THE PROBLEM

Agricultural Education, in order to grow, must be housed in an environment conducive to such growth. There appears to be some concern in the profession about the climate for growth in certain administrative units. Therefore, the primary purpose of this research was to investigate the similarities and differences found in Agricultural Education programs housed in the Colleges of Agriculture and in the Colleges of Education. By collecting these types of data it is possible to determine in which administrative unit Departments of Agricultural Education are faring the best.

OBJECTIVE

The specific objective of this research was to compare Departments of Agricultural Education housed in Colleges of Agriculture with those housed in Colleges of Education on the following variables:

1. Number of tenure track faculty
2. Number of supported graduate students
3. Percent of departments which had faculty on 12 month contracts
4. Number of out-of-state professional meetings attended
5. Amount of reimbursement for attending professional meetings
6. Size of operating budget
7. Starting salary for a beginning assistant professor
8. Enrollment in undergraduate and graduate programs
9. Accreditation of undergraduate and graduate programs
10. Difficulty in securing promotions

This research did not consider theoretical or philosophical factors, but considered only the more materialistic or survival factors.

METHODOLOGY

A list of Agricultural Education departments was compiled from the 1981-1982 Directory of the American Association of Teacher Educators in Agriculture. The 83 Departments of Agricultural Education identified served as the population for this study. The chairperson of each department was asked to respond for their department.

Data were gathered by means of a researcher developed questionnaire. The instrument was designed to collect data relative to selected aspects of the administrative structure, fiscal management, and characteristics of the agricultural education program. Additionally, perceptions of the department chairpersons regarding selected aspects of the program were ascertained through the use of a five point Likert-type scale. A total of 32 items was contained on the instrument; many of which were based on points raised in the Binkley-Knebel debate.

The instrument was mailed to the chairpersons in April of 1982. Responses were received from 56 chairpersons for a response rate of 67 percent. The researchers would have liked to have seen a higher response rate. A follow up of the nonrespondents raised the number of respondents to 64 for a response rate of 77 percent.

Simple descriptive statistics were calculated on selected variables. Independent sample t-tests were used when the dependent variables were interval or ratio data. The chi square test for independence was to be used on the ordinal data; however, the expected frequencies in the tables did not meet the minimum criteria for the chi square statistic. In these instances the data are reported but no statistical analysis was performed.

FINDINGS

Of the 64 departments which responded, 39 were located in a College of Agriculture or in units which were scientifically oriented, such as a College of Life Science or a College of Technology. In this study all units which were housed in colleges with a scientific orientation were classified as Colleges of Agriculture since the majority of the colleges were indeed Colleges of Agriculture.

Eighteen departments were located in Colleges of Education or similar types of units, such as Colleges of Professional Study or Colleges of Humanities and Art. In this study, all units which were humanistically oriented were classified into one grouping called a College of Education.

Seven departments were located in administrative units which were difficult to classify. It was not possible to determine the academic inclination of the unit from the name listed or the unit did not fit the two categories established for this study. These seven departments were excluded from the study. Therefore, the remainder of the findings will focus on the 57 remaining departments.

Faculty

Departments of Agricultural Education associated with Colleges of Agriculture had slightly less Full Time Equivalent (FTE) faculty than did those departments housed in the Colleges of Education. Departments in the Colleges of Agriculture had a mean FTE of 3.58 compared to a mean FTE of 3.68 for departments in the Colleges of Education. This slight difference was not statistically significant. These figures along with other data are displayed in Table 1.

More faculty in Colleges of Agriculture were on 12 month contracts than were faculty in Colleges of Education. Slightly over 71 percent of the Departments of Agricultural Education in the Colleges of Agriculture had faculty who were on 12 month contracts while 56 percent of the Departments of Agricultural Education in Colleges of Education had faculty who were on 12 month contracts. Caution must be exercised in interpreting this finding. The data reported were for departments, not individual faculty members. For example, one department with 14 faculty members could report the percent of faculty on 12 month contracts was 100 percent. Another department with two faculty members could report that only 50 percent of the faculty was on 12 month contracts. Since the data were reported by departments, the computer would add 100 percent and 50 percent, divide by two departments, and arrive at a figure of 75 percent. In actuality 15 out of 16 members were on twelve month contracts.

There was virtually no difference in the number of supported graduate students according to the location of the department. Departments housed in Colleges of Agriculture averaged 1.44 supported graduate students while departments housed in Colleges of Education average 1.25 supported graduate students. Needless to say, this difference was not statistically significant.

The number of out-of-state professional meetings attended by faculty in the Colleges of Agriculture was 2.8 while the number of out-of-state professional trips taken by faculty in the Colleges of Education was 3.0. Faculty in the Colleges of Agriculture were reimbursed for 84 percent of their travel expenses while faculty in Colleges of Education received reimbursement at the rate of 74 percent. None of these differences were statistically significant. These figures are presented in Table 1.

TABLE 1

SELECTED CHARACTERISTICS OF DEPARTMENTS OF AGRICULTURAL EDUCATION LOCATED IN COLLEGES OF AGRICULTURE AND COLLEGES OF EDUCATION

Variable	College of Agriculture	College of Education
FTE tenure track faculty	3.58	3.68
Percent of Departments with faculty on 12 month contracts	71.62	56.39
Supported graduate students	1.44	1.25
Number of out-of-state professional meetings attended by each faculty member	2.84	3.00
Percent of reimbursement for out-of-state professional meetings	84.05	74.19

Finances

Two questions were asked to determine the financial resources of the departments. The first question asked concerned the size of the operating budget over which the head of the department had control. The second question asked what the starting salary would be for a beginning assistant professor on a 12 month contract. In order to avoid embarrassing department heads or forcing department heads to reveal financial information that they did not want revealed, the possible responses were grouped into broad categories. The respondents only had to check the most appropriate category.

Five of the departments located in Colleges of Agriculture had operating budgets in excess of $300,001. None of the departments located in Colleges of Education had this large a budget. One department housed in a College of Education had a budget between $200,001 and $300,000 while two departments in Colleges of Agriculture had budgets this large. Nearly half (8/18) of the departments housed in Colleges of Education had operating budgets of less than $10,000. Approximately one-sixth of the departments (6/39) housed in Colleges of Agriculture had budgets this small. Ten departments in Colleges of Agriculture had budgets of $25,001 to $50,000. A complete breakdown of the budgets is presented in Table 2. It appears that departments in Colleges of Agriculture have larger budgets.

Departments of Agricultural Education located in Colleges of Education indicated they would pay slightly more for a beginning assistant professor. Even though the data were grouped, the researchers calculated a mean salary through an extrapolation process using the midpoint of each range. The extrapolated starting salary in

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a department located in a College of Education was $22,647 while the extrapolated starting salary in the College of Agriculture was $22,256. The breakdown of starting salaries is presented in Table 2.

TABLE 2

FINANCIAL CHARACTERISTICS OF DEPARTMENTS OF AGRICULTURAL EDUCATION LOCATED IN COLLEGES OF AGRICULTURE AND COLLEGES OF EDUCATION

Variable	College of Agriculture	College of Education
Operating budget over which the head of Agricultural Education has control		
Under $10,000	6	8
$10,001 to $25,000	10	5
$25,001 to $50,000	7	1
$50,001 to $100,000	3	2
$100,001 to $200,000	5	1
$200,001 to $300,000	2	1
Over $300,001	5	0
Starting salary a beginning assistant professor would receive on a 12 month contract		
Under $17,500	1	0
$17,501 to $20,000	10	4
$20,001 to $22,500	9	3
$22,501 to $25,500	10	8
$25,501 to $27,500	7	1
$27,501 to $30,000	1	0
Over $30,001	0	1

Enrollment and Accreditation

Departments of Agricultural Education located in Colleges of Education had about six less undergraduate students on the average. Again using an extrapolation process, the mean undergraduate enrollment revealed in departments housed in Colleges of Agriculture was 73.6 while departments located in Colleges of Education had a mean undergraduate enrollment of 67.2.

All of the undergraduate programs (100%) located in Colleges of Education were accredited by NCATE. Only 92 percent of the programs located in Colleges of Agriculture were accredited.

Departments of Agricultural Education located in Colleges of Agriculture indicated they would award an average of 7.1 Master of Science degrees during the 1981-1982 school year. Departments housed in Colleges of Education indicated they would award 7.3 Master of Education or Master of Science degrees during the 1981-1982 school year. This difference was not statistically significant.

There is a difference in the number of Masters programs which are accredited by NCATE in the two colleges. Only 24 of the 32 (75%) departments which offered Masters degrees in the Colleges of Agriculture were accredited by NCATE. By contrast, all 17 departments which offered the Masters degree in the Colleges of Education were accredited by NCATE.

Ten of the 18 departments located in Colleges of Education offered the doctorate while 12 of the 39 departments located in Colleges of Agriculture offered doctorates. The doctorate awarding departments in the Colleges of Agriculture indicated they would award 3.4 doctorates in the 1981-1982 school year while the departments in Colleges of Education were going to award 1.9 doctorates.

Approximately 92 percent of the doctoral programs housed in Colleges of Education were approved by NCATE while 67 percent of the doctoral programs located in Colleges of Agriculture were accredited by NCATE. Data about enrollments and accreditation are presented in Table 3.

TABLE 3

ENROLLMENT AND ACCREDITATION FIGURES FOR DEPARTMENTS OF AGRICULTURAL EDUCATION

Variables	College of Agriculture	College of Education
Mean undergraduate enrollment	73.6	67.2
Percent of undergraduate programs accredited by NCATE	92.0	100.0
Number predicted to receive a Masters degree in 1981-1982	7.1	7.3
Percent of Masters programs accredited by NCATE	75.0	100.0
Number predicted to receive a doctoral degree in 1981-1982	3.4	1.9
Percent of doctoral programs accredited by NCATE	66.7	91.7

Perceptions

Nine statements were included on the survey instrument which called for an agree-disagree response from the department chairpersons. A five point Likert-type scale was the device used to ascertain the degree of agreement or disagreement. A rating of 5.0 would indicate strong agreement while a rating of 1.0 would indicate strong disagreement. The statements and responses are located in Table 4.

Two of the statements were concerned with the amount of support Agricultural Education programs received from the Colleges of Education and Agriculture. In both instances the department chairpersons indicated they received more support from the College of Agriculture than from the College of Education. It was interesting to note that chairpersons of Departments of Agricultural Education located in Colleges of Education indicated they received more support from the College of Agriculture. However, it should be noted that none of these differences were statistically significant.

Two statements focused on the teaching ability of faculty members in the Colleges of Agriculture and Education. Here again the department chairpersons indicated the teaching ability of faculty located in Colleges of Agriculture was greater than that of the Education faculty.

Two statements dealt with the quality of courses taught in the two different colleges. Again the agriculture colleges received the higher marks.

One of the statements was, "It is difficult getting faculty promoted in the College of Agriculture". Chairpersons of departments located in Colleges of Agriculture were in general disagreement with this statement. Department heads in Colleges of Education leaned toward the uncertain position. The rankings were 1.7 and 2.8 respectively, which is statistically significant ($t=3.03$, $df=24.69$, p .05).

The corresponding statement was, "It is difficult getting faculty promoted in the College of Education". The agricultural department heads' rating was 2.7 while the education department heads' rating was 3.0. This would indicate that both groups believe it is easier to get promoted in the Colleges of Agriculture.

One final statement was, "Agricultural Education would fare better in some other college". Heads of departments housed in Colleges of Agriculture were in strong disagreement with this statement. Chairpersons located in Colleges of Education were near the uncertain mark. It appears that heads of departments housed in Colleges of Agriculture are opposed strongly to moving to another college while department heads housed in Colleges of Education are somewhat uncertain.

An independent sample t-test was calculated on each of the nine statements. The researchers realize this technique has a tendency to increase the chance of making an alpha error. The researchers would have preferred to sum the scores on the statements and come up with one overall score to analyze. However, the statements were not really appropriate for summing.

TABLE 4

PERCEPTIONS OF DEPARTMENT CHAIRPERSONS REGARDING SELECTED STATEMENTS

Statements	College of Agriculture	College of Education	t-value
Agricultural Education receives strong support from the College of Agriculture.	4.6	4.2	1.94
Agricultural Education receives strong support from the College of Education.	3.8	4.0	0.69
The teaching ability of faculty in the College of Agriculture is good.	4.3	4.2	0.85
The teaching ability of faculty in the College of Education is good.	3.8	3.9	1.01
The quality of courses in the College of Agriculture is high.	4.5	4.2	2.27*
The quality of courses in the College of education is high.	3.4	3.8	1.45
It is difficult getting faculty promoted in the College of Agriculture.	1.7	2.8	3.03*
It is difficult getting faculty promoted in the College of Education.	2.7	3.0	0.91
Agricultural Education would fare better in some other college.	1.3	2.8	4.17*

The rating scale was 5 - strongly agree, 4 - agree, 3 - undecided, 2 - disagree, and 1 - strongly disagree.

*Statistically significant at the .05 alpha level

CONCLUSIONS

There were no major differences between Departments of Agricultural Education located in Colleges of Education and those located in Colleges of Agriculture. The number of faculty, supported graduate students, attendance at professional meetings, undergraduate enrollment, and Masters enrollment were virtually the same. There was a tendency for programs located in Colleges of Education to be approved by NCATE more often than were similar programs in the Colleges of Agriculture. It appears that departments located in Colleges of Agriculture have larger operating budgets.

The major differences appear to be in how department chairpersons perceive the atmosphere in which they are located. Regardless of college affiliation, the chairpersons believed Agricultural Education programs received stronger support from the Colleges of Agriculture, the quality of teaching and courses in Colleges of Agriculture were better, and it would be easier to get faculty promoted in Colleges of Agriculture. If given the opportunity to leave the College of Agriculture, departments which are housed there would not. The departments housed in the Colleges of Education tended to be undecided if they would move.

Considering all the variables presented in this paper, it appears as if the scales may tip slightly in favor of the Colleges of Agriculture.

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DISCUSSION OF RESEARCH REPORTS ON IMPROVING PROGRAMS IN AGRICULTURAL EDUCATION
NATIONAL AGRICULTURAL EDUCATION RESEARCH MEETING *
ST. LOUIS, MISSOURI
DECEMBER 3, 1982

Robert A. Martin
Assistant Professor of Agricultural Education
Purdue University

The three research projects reported upon this morning have provided us with some important and interesting information which has potential value in helping us solve educational problems and improve our educational programs. Quality research must be properly conceived, conducted, reported, and examined if we are to find answers to perplexing problems in agricultural education. Now that these three research reports have been made, I hope that my comments will assist us in the examination stage of the process. In the final analysis, those who read the research reports must decide how applicable and appropriate they are for answering questions and solving problems. Those present today may choose to accept or reject the validity of my remarks in this regard, but I do hope that you join with me in continuing the process of critical examination of our profession's investigations and use the information gleaned by this examination accordingly.

At the outset, let me state that my remarks are based on the research papers sent to me for review prior to the conference. I plan to indicate what I regard to be the strengths of the papers presented, raise questions, and make recommendations for improvement.

Many times we find that research raises more questions than it answers. Accordingly, I plan to raise several questions. Nonetheless, I want to commend the authors for conducting research in the area of program improvement. Each one of these studies gets us thinking and that in itself is an important achievement.

REPORT I: AN ASSESSMENT OF VOCATIONAL AGRICULTURE PROGRAMS AS PERCEIVED BY FEMALE STUDENTS
BY
Marvin Cepica and Thomas Quarles

Strong Points

I would like to compliment the authors for conducting research on an interesting and important topic. Gaining the perceptions of our current vocational agriculture students is as important as receiving feedback from graduates of our programs, if not more important. Some would say that we haven't made much progress in opening our doors to all students interested in careers in agriculture. The authors are to be commended for their efforts. I wish to commend the authors for clearly describing the development of the questionnaire and the panel of advisors used to refine the instrument. It is clear that there was an objective evaluation of the instrument. The authors are commended for receiving a high rate of return of the questionnaires in this study. This return rate adds to the strength of the results of the study. I wish to commend the authors for using appropriate statistical analysis.

Questions and Suggestions for Improvement

Although I found the research to be generally well done, I must admit that I am somewhat frustrated by the lack of data tables to present information in the report. I recommend that the data be presented in table form as much as possible with appropriate explanation as needed. It is difficult to properly analyze the data if it is not presented in table form. Your report would be enhanced greatly by the use of tables and the corresponding reduction in excess written explanation.

I am concerned that the introduction to your paper does not lead to a clear statement of the problem based upon a literature review. What is the theoretical base for the problem? While introductions, by necessity, must be short, there should be reference made to previous work in the field of endeavor and this review should help the author formulate the researchable problem. This review established credibility for the study.

I would encourage the authors to state the objectives for the study more clearly. What is meant by the word "problems"?

Although I compliment the authors for attempting to explain the sampling procedures used in this study, I have a number of questions regarding the sample utilized. Why did you decide to select seven schools from each area? One-half of those surveyed were from metropolitan areas. Nearly one-half of those surveyed were from large schools. Does this information influence the results and bias the implications?

In addition, one-half of the students surveyed were in Vo. Ag. I. Do these students have sufficient background to assess the questions?

The authors reported that 165 out of 250 departments agreed to participate in the study (73%). What follow-up procedures did you use? Where are those departments located that chose not to participate? What unique characteristics does this group have?

While you attempted to discuss the population and sample of the study at some length, and justifiably so, I would have liked to have known more about the mechanics and administration of the survey. What time frame was used?

I commend the authors for field-testing the questionnaire. However, the authors should explain where this was done and report the results. What is the reliability of the instrument?

Fifty-eight percent of those surveyed indicated they were undecided about career goals. Does this reflect Vo. Ag. I characteristics and does this information tell us something about the results, implications, conclusions and recommendations of this study? In addition, ten percent of the females surveyed were planning careers in areas other than agriculture. Why are these students in vocational agriculture?

In analyzing this research study, one might ask if it should have gone one step further and gotten male perceptions also.

Some of the conclusions reported by the authors, in fact, state that "male students believe..." I would caution you to be careful - your survey was on female perceptions. We can only say that females believe that males feel this or that way.

It may not be enough to have one side of the picture. Do we not support bias when we only look at one side of an issue? Perhaps this could be a recommendation for further study. Your conclusions, while basically sound, may be rather sweeping in their generalizations. While reading them, I almost got the impression that all students feel this way.

Your recommendations should reflect a need to welcome female students into vocational agriculture, not because they are females, but because they are students interested in agriculture.

It would be helpful if the conclusions and recommendations were less wordy. Concise, clearly stated conclusions and recommendations enhance the readability of the research report.

REPORT II: TEACHING VOCATIONAL AGRICULTURE AS PERCEIVED BY VOCATIONAL AGRICULTURE STUDENTS

BY

Duane Sprouse and David L. Williams

Strong Points

I would like to compliment the authors for having done an excellent job in conducting their research and reporting upon their results. The introduction leads into the problem and is documented with supportive research. A clear, theoretical framework was established. The topic possesses potential value in helping us understand the perceptions others have of our profession, albeit with somewhat alarming implications. The objectives are expressed in clear, precise terms. The authors are to be commended for the care they took in providing for internal consistency of the questionnaire in using the causal-comparitive design utilizing explanatory description procedures. I also want to

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compliment the authors on the effective presentation of the data in easily understandable tables and for using an appropriate statistical analysis.

Questions and Suggestions for Improvement

Although I found the research to be well done, I do have a number of questions and suggestions. I notice that there are no literature citations from 1970 to 1981. I suggest that building a theoretical framework for a study should include some recent work; otherwise, we might be accused of establishing our rationale for our research on data that may not have a direct bearing on a current thrust.

While the authors justifiably explain the sampling procedures at some length, I feel compelled to ask why the study was limited to the southeastern portion of the state? What unique characteristics are prevalent in this area? What biases enter into this study as a result of using only this area? A profile of the students indicates what some may regard as unique characteristics which make generalization a problem. For example, the authors state that most of the respondents were males, possessing a farm background, having older brothers and sisters, one-half of whom had attended college. These respondents had earned over $1000 in supervised occupational experience programs, had been members of the FFA for four years, held the chapter farmer degree, had been or were FFA officers, chaired committees, received recognition and had grades of B's and C's in vocational agriculture and other subjects. While the findings of the study may be significant, we must be careful in interpreting to what groups they are significant and the implications of research based on these characteristics. In addition, I would like the authors to state the rationale behind using only seniors or fourth year students in this study.

The authors clearly describe the sampling procedures. You refer to the teachers who consented to conduct the survey, but you failed to give any information about those who did not consent to conduct the survey and why they chose not to participate. How many were there in this category? How many questionnaires were not useable? Why were they unfit?

I compliment the authors on presenting a fairly comprehensive explanation of the contents of the questionnaire. However, I suggest that they explain how they arrived at these decisions. Whose input was sought? What were the qualifications of these people? In addition, the administration of the instrument raises some concerns. What control did you have over this procedure? Did everyone conduct the survey as prescribed? How do you know? What time frame was followed?

The various scales of the questionnaire - personal, general teaching responsibilities and FFA responsibilities - need to be defined more clearly. At the very least, the items under each scale should be more clearly defined if not listed in a concise table.

I recommend that the method of scoring the questionnaire using the transformed scale should be explained more carefully and completely. Perhaps you should have explained the assumption apparently supported by Warren et al that a transformed scale is justified. A further explanation as to why this transformed scale was used would be appropriate. I encourage the authors to summarize their report by inclusion of a short list of conclusions derived from the study. Conclusions tie the findings together and provide an appropriate closure to a report of research.

Perhaps the most significant part of this study relates to the implications of some of the findings, keeping in mind what I have outlined as limitations. To a large extent, reviewers of this research study may not be surprised to learn that FFA activities and personal teacher factors may be considered "encouragers" in so far as recruiting future teachers from the ranks of high school vocational agriculture students is concerned, but I find it of great concern that general teaching responsibilities, SOE, and occupational goal setting are on the border of being either not encouraging or even discouraging young people to enter teaching. If our teaching responsibilities turn people off, what does this say for our profession? Two other concerns eminating from this study center around these questions: Are we in danger of only teaching to the students who have the "potential"? and Do future teachers of vocational agriculture only come from vocational agriculture programs? In many states, the great majority do not.

REPORT III: CHARACTERISTICS AND DIMENSIONS OF PROGRAM IMPROVEMENT IN AGRICULTURAL EDUCATION

BY

Wesley E. Budke

Strong Points

I would like to compliment the author for writing such a concise, clearly stated report. As stated by the author, "this analysis provides an added dimension to the knowledge about agricultural education program improvement." The topic possesses potential value in helping us evaluate what we have done in the past in order that we might more accurately chart a course for the future of our profession. The author should be commended for giving us this research report which challenges us to develop a mission statement for agricultural education. The objectives are expressed in clear, precise terms. I wish to compliment the author on the effective presentation of the data in easily understandable tables and for using an appropriate statistical analysis. The references are very good and the questions raised by the author are worthwhile and should be carefully considered by agricultural educators.

Questions and Suggestions for Improvement

Although I found the research to be well done, I do have a number of questions and suggestions. The introduction of the paper was more like a summary than an introduction. The implications of the findings would more appropriately be placed near the end of the paper. I encourage the author to provide a theoretical framework for the research based on an appropriate literature review.

Although the tables appearing in the paper were excellent, the way in which they were presented along with the necessary explanation for each table was confusing and frustrating for the reviewer. Discussion of Table 2 should not begin until Table 1 has been presented and discussed. Flipping pages back and forth causes confusion to the reader. This matter seems to be of little consequence, but if the reader is confused and frustrated, will he/she really take the time to carefully read the research report? I suggest that this matter be corrected prior to submission of this report for wider publication.

Although the author listed five procedural steps for conducting this review and analysis, I recommend that these procedures be more fully explained. A more thorough explanation of the analysis procedures that were used would also be in order. Justification for this analysis should be stated.

I commend the author for stating very clearly the conclusions drawn from this study. These conclusions highlight the major findings of the study and deserve considerable discussion as we attempt to decide where we are going.

Perhaps one of the most significant questions arising out of this study is one that is implied but not asked directly. After all is said and done, after considering all the money that has been spent, have we spent it in the right areas, has it effected change, and has it been cost effective?

Although the questions posed at the conclusion of the paper are excellent and merit consideration, I encourage the author to make definite recommendations in addition. In this way, the author provides a springboard for action.

SUMMARY

In summary, allow me to state that I have attempted to answer ten questions in reviewing these research studies. I believe they form the framework around which we must examine our research studies.

1. Is the research problem clear?
2. Are the objectives clearly stated?
3. Is the research problem worth investigating?

4. Has the author made any assumptions and stated any limitations?
5. Is there a clear theoretical framework around which the problem has been developed?
6. Has credibility been established by a sound review of the literature?
7. Is the methodology and analysis sound and appropriate?
8. Are the procedures clearly stated?
9. Are the findings clearly stated and the conclusions and recommendations justified?
10. What are the implications of the research? Will the results effect change?

As I stated at the outset, I hope that we continue to critically analyze our research investigations and that our evaluations lead to improvement of our profession. It is my hope that these few comments have contributed constructively to this process.

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AN ASSESSMENT OF VOCATIONAL AGRICULTURE PROGRAMS AS PERCEIVED BY FEMALE STUDENTS

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INTRODUCTION

During recent years, changing attitudes by society toward females in the work force have influenced females to seek gainful employment. Economic factors have also made it necessary for many females to work outside of the home to supplement family income and a need for employment has been created with the increasing number of females who have become heads of households by choice, by divorce, or by death of a spouse. An increasing number of these females have moved into careers that have been traditionally dominated by males, including agriculturally oriented careers which require certain job related skills necessary to obtain and maintain employment. Increasing female enrollments in traditionally male-dominated vocational agriculture classes and increasing female employment in agricultural occupations has necessitated changes in administrative practices, curricula, teaching methods, and attitudes of teachers, students, and employers in agricultural environments.

To insure that educational, occupational, social, and economic opportunities are equitable for women and men, federal legislation has been passed to provide for the legal aspects of respective situations. Passage of the Education Amendments of 1972 was used to establish guidelines by which equal education is to be provided regardless of sex. More specifically, Title IX of the 1972 amendments was used to guarantee that any educational program would be allowed equal access, participation in, and absence of discrimination by any person on the basis of sex. Additionally, specific provisions were made by legislators in the Vocational Education Amendments of 1976 to overcome sex discrimination and sex stereotyping in vocational programs and to furnish equal education opportunities to persons of both sexes. Both the 1972 and 1976 amendments have served as cornerstones on which developing trends regarding the status of women in vocational education programs and in occupational work forces are based. For vocational agriculture programs to be most effective in preparing female students for careers in agriculture, agricultural educators have needed to determine how female students perceived the program.

OBJECTIVES

The primary purpose of this study was to determine female vocational agriculture students' perceptions of the vocational agriculture

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program in Texas. In order to accomplish this purpose, the following objectives were formulated:

1. To determine female students' perceptions of the problems perceived in vocational agriculture programs.
2. To identify problems perceived to be curriculum oriented.
3. To identify problems perceived to be student oriented.
4. To identify problems perceived to be school oriented.

METHODS AND PROCEDURES

Population and Sample

The population examined in this study included all schools within the 10 geographical areas of Texas (Figure 1) in which female students were enrolled in regular vocational agriculture programs.

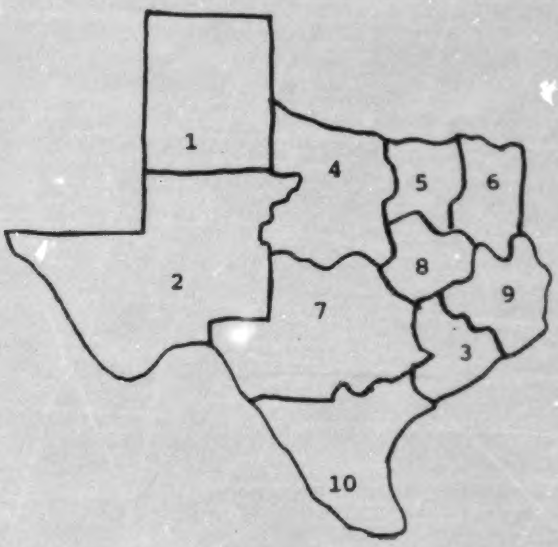

Figure 1. Vocational Agriculture Areas of Texas

The research sample was obtained from female students enrolled in regular vocational agriculture programs in Texas. The area consultant of each of the 10 geographical areas submitted a list of 25 schools in which female vocational agriculture students were enrolled. A letter, requesting participation in the study, was mailed to teachers in each of the 250 vocational agriculture departments. Of the vocational agriculture teachers contacted, 165 responded, yielding a 73.3 percent return and a potential sample of 2,516 female students.

The 165 schools were then stratified by area and 70 schools were randomly selected by drawing seven schools from each area. Of the 70 schools selected, students from 64 departments completed questionnaires, yielding a 91.4 percent return. A sample of 735 female vocational agriculture students was included in the data analysis. Procedures suggested by Oliver and Hinkle in a paper presented at the 30th Annual

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Southern Research Conference in Agricultural Education were used to verify the appropriateness of the sample size for use in statistical analyses.

Data Gathering Instrument

A questionnaire, consisting of restricted and nonrestricted responses, was developed to obtain demographic and quantifiable data. Questions for the instrument were developed so that information gathered would provide data relevant to meeting the objectives of this research.

After development of the initial questionnaire, an advisory committee consisting of 10 vocational agriculture teachers, three teacher educators, and two Texas Education Agency personnel was selected to review the questionnaire. Following reveiw and revisions, the questionnaire was field tested utilizing five students from 10 vocational programs. The field tests by female students were assessed and revisions were made to further enhance the quality of the instrument and the questionnaire was submitted to the Research Coordinating Unit of the Texas Education Agency for final approval.

Following collection of the data, information was entered by remote computer terminal and analyzed using the Statistical Analysis System (SAS) version 79.5. Descriptive statistical analysis included the determination of mean values, standard deviations, standard errors, frequencies, and percentages.

RESULTS

Findings

Delineations of the Demographic Data

The sample population of this study was female vocational agriculture students from 70 randomly selected schools in Texas. Enrollment delineation of the sample size indicated approximately one-half of the sample students were enrolled in Vocational Agriculture I. Students enrolled in Vocational Agriculture II classes comprised about one-fourth of the sample population, while Vocational Agriculture III and IV, Pre-Employment Laboratory, and Cooperative Part-Time Training enrollments represented one-fourth of the sample. The sample population was distributed evenly among the grade levels (9-12) with tenth graders accounting for the largest percentage (30.7 percent).

Data concerning the ethnic backgrounds of the sample population was also procured. Students indicated their ethnicity by identifying one of seven categories according to Texas Education Agency classifications. White Non-Hispanic students comprised the largest percentage of the sample population. Forty-three students had Hispanic origins (5.9 percent) and three students were Black Non-Hispanic (0.4 percent). Three of the students (0.4 percent) indicated they were of racial backgrounds other than the ones listed.

Students also disclosed their future career choices. They revealed whether their future plans were agriculturally oriented, non-agriculturally oriented, or undecided. Fifty-eight percent of the students were undecided, while 32.4 percent planned agricultural oriented careers and 9.6 percent planned careers in fields other than agriculture.

A fifth analysis factor was geographical area of the state. Areas three, seven and ten represented approximately one-half of the sample population. It should be noted that these three Areas contained large metropolitan populations.

To provide information on school enrollment, vocational agriculture instructors completed a form indicating their school size. In Texas, five classifications exist according to the student enrollment in grades nine through twelve. These classifications are 5A, 4A, 3A, 2A, and 1A with 5A schools having the largest enrollment and 1A schools having the smallest enrollment. The 5A schools (1310 students and above), comprised the largest percentage (42.5) of the sample population. Only 3.9 percent of the sample population was found in 1A schools (134 students or below).

An open ended response was included in the demographic portion of the questionnaire, asking the female students to indicate reasons they chose to enroll in vocational agriculture. The primary reasons indicated by students are as follows: They wanted to learn about animals, (46.3 percent), they were interested in learning about agriculture, (31.4 percent), and they wanted to prepare for a future career, (8.9 percent).

Descriptive Analysis of the Data

Students indicated their perceptions of the vocational agriculture program by responding to selected statements that were divided into four groups or areas. These groups represented statements that were curriculum oriented, school oriented, student oriented, and employment oriented. The students responded to each of the selected statements by indicating the degree to which they agreed or disagreed with the statement. The responses were arranged in a Likert scale format, in which the student could respond to five degrees of influence. (Strongly agree - 1, slightly agree - 2, neutral - 3, slightly disagree - 4, and strongly disagree - 5). Real limits were determined for use in analyzing the values obtained.

Mean values, frequencies of response categories, and standard deviations of the sample were obtained for each of the selected statements. These mean values, frequency of response categories, and standard deviations were used to rank order the selected statments, which indicated factors affecting female students enrolled, according to the student sample response.

Open Response Analysis

The questionnaire included open response questions to which students indicated perceived problems regarding their enrollment in vocational agriculture and problems that they observed other female students experience in vocational agriculture. These responses were ranked by the students in descending order from one to three. A numerical value was placed on the responses in order to mathematically weigh the factors in reporting cumulative responses.

The results of the rank orders for both open response questions were found to be essentially the same. The factor found to rank first among the students surveyed was that female vocational agriculture students are not accepted by male students in vocational agriculture. The factor ranked second indicated that male students perceived female students less capable of performing agricultural skills. The fourth, fifth, and sixth ranked problems (in order) were inadequate restroom facilities for female students, non-acceptance by vocational agriculture teachers, and low expectations of female students. The female students perceived inadequate opportunities to develop shop skills as the seventh ranked problem.

Curriculum Factors

The students responded to 14 selected statements regarding curriculum aspects of the program. These aspects included curriculum materials, curriculum content, and curriculum activities.

The number one ranked statement was "illustration of female students performing agriculture tasks in curriculum materials", with a mean value of 2.11. Ranked second was "curriculum materials contain word phrases pertaining to female students". The statement "curriculum materials contain information on career opportunities for female students" was ranked third by the student sample.

Although the mean values for the aforementioned statements were within the real limits for slightly agree (1.50-2.49) it should be noted that the number of students indicating a slightly disagree or strongly disagree response was somewhat large. For example, an examination of the response statement "curriculum materials illustrate female students performing agricultural tasks" revealed a mean value of 2.13 which indicated that the students slightly agreed with the statement. However, 90 students (12.24 percent) slightly disagreed or strongly disagreed with the statement indicating some students perceived this factor might adversely affect female students enrolled in vocational agriculture.

The fourth and fifth ranked statements affecting female students were "adequate opportunities exist for females to obtain shop skills and livestock handling skills". The mean values indicated the students slightly agreed with the factor that adequate opportunities existed to develop shop skills. It was also noted that 12.24 percent of the sample slightly disagreed or strongly disagreed with this statement.

The sixth ranked statement with a mean value of 1.45 (strongly agreed) was "instructors provide Supervised Occupational Experience Program visits to male and female students". "Information taught in vocational agriculture is useful for male and female students" was the seventh ranked statement with a mean value of 1.29.

Mean values for factors eight through ten, which ranged from 1.27 to 1.17, indicated the students strongly agreed that they had adequate opportunities to have commercial livestock projects and obtain FFA awards and offices. The eleventh through fourteenth ranked factors in order of mean values indicated that adequate opportunities existed to participate in leadership contests, judging contests, FFA activities, and livestock shows.

School Factors

Several statements within the questionnaire were developed to identify factors affecting females enrolled in vocational agriculture that might be classified as being school related. The statement receiving the highest mean value (2.22) was "administration encourages enrollment of males and females in vocational agriculture programs". It was noted that 68 students slightly disagreed with the statement and 68 students strongly disagreed with the statement.

The second ranked factor was identified as "non-vocational agriculture teachers feel vocational agriculture is an acceptable program for females", with a calculated mean value of 2.15. Seventy-two of the students indicated that they slightly disagreed with the statement and 44 students indicated that they strongly disagreed with the statement.

Adequate discipline by the teacher, female acknowledgements by the teacher, equal expectations by the teacher, and career opportunity counseling were the third, fourth, fifith, and sixth ranked factors affecting the female students with mean values of 1.95, 1.58, 1.58, and 1.44 respectively.

Student Factors

The third area or group of factors affecting female students enrolled in vocational agriculture was identified as those that were student oriented. Six statements regarding student factors affecting female students enrolled in vocational agriculture were developed.

The statement, "nonvocational agriculture students perceive vocational agriculture as a program for females," ranked first with a mean value of 2.50. One hundred seventy-one students slightly disagreed or strongly disagreed with this statement, indicating the factor affected the respondents more adversely than other student factors did.

"Vocational agriculture teachers encourage enrollment of female students in vocational agriculture" was the second ranked statement with a mean value of 1.60. Fifty-two students slightly or strongly disagreed with the statement. The third and fourth ranked factors were "families support females enrolling in vocational agriculture" and "female students are accepted by male vocational agriculture students". Both factors had mean values of 1.50. The fifth ranked mean value indicated students strongly agreed that female students enrolled in vocational agriculture perceived vocational agriculture as a program designed for females, and ranking last, the students strongly agreed (1.31 mean value) that female students accept the practice of electing an FFA sweetheart.

Employment Opportunity Factors

The last group of factors identified as affecting female students enrolled in vocational agriculture was the area related to female employment opportunities in agricultural occupations. The first ranked factor in this area was "female students are informed of agriculturally related occupations in the community." This factor had a mean value of 1.90 with 52 of the students slightly disagreeing and 22 of the students strongly disagreeing with the statement. The students ranked the statement "agricultural employers accept female students" second with a mean value of 1.88. The third ranked factor "the community accepts female students in agricultural related occupations" had a mean value of 1.75. It was noted that mean values for all three factors were within the real limits for the slightly agree category.

Conclusions

Many factors may affect female students enrolled in vocational agriculture programs in Texas. The analysis of the data indicated some positive factors or strengths of the program. Conversely, female vocational agriculture students assessed some factors as having slightly adverse effects on them. The primary objective of this research was to identify factors that might present problems for female vocational agriculture students in curriculum, school, student, and occupationally oriented areas.

Likert scale responses from students did not indicate factors having a prominent adverse effect on them. All mean values ranged in the strongly agree to slightly agree category, except for one factor having a mean value of 2.50 (neutral), indicating overall positive attitudes toward the program. The factors identifies as adversely affecting female students were determined from a combination of the mean values, the frequencies of the statements receiving slightly or strongly agree responses, and an evaluation of the open response portion of the instrument.

Through completed research, the following positive attitudes were found to be prevalent among female students surveyed.

1. Results from completed research indicated that females enrolled in the regular vocational agriculture programs in Texas have positive attitudes toward the programs. Their overall views are wholesome, their experiences rewarding, and the program is perceived as being beneficial.
2. The sample population chose to enroll in vocational agriculture because they were interested in agriculture, liked animals, and wanted to prepare for a future career in agriculture.
3. Female vocational agriculture students indicated they were given adequate opportunities to participate in FFA programs and activities such as leadership and judging teams, chapter offices, and the supervised occupational experience program.

Any program, regardless of its vitality should undergo routine evaluation to insure continued success. Several areas requiring attention by each vocational agriculture teacher include the following.

1. Female vocational agriculture students may not be readily accepted by male students in vocational agriculture.
2. Some female students may not be adequately informed concerning agricultural related occupations.
3. Students who are not enrolled in vocational agriculture may not perceive vocational agriculture as a program for females.
4. Some male students believe female students are less capable of performing agricultural skills. Likewise, some female students also share this belief.
5. Some school administrators do not encourage enrollment of females in vocational agriculture programs.
6. Some vocational agriculture teachers have a negative attitude toward female students. Some vocational agriculture teachers do not believe vocational agriculture is an acceptable program for females and some teachers do not have the same expectations of male and female students.
7. In some instances, restroom facilities are inadequate for

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female students.

8. Some female students do not believe they are given the opportunity to develop certain mechanical or livestock handling skills.
9. Students indicated that some materials did not illustrate female students performing agricultural tasks, did not contain word phrases pertaining to female students, and did not provide information concerning agriculture career opportunities for females.

This research effort has shown that vocational agriculture teachers in Texas have made progress in eliminating sex bias, stereotyping, and discrimination even though vocational agriculture has traditionally been a male-dominated program. Positive steps have been made to make the program fully accessible to members of both sexes. Continued success of vocational agriculture programs will be dependent upon the presentation of favorable environments in which students may learn basic agricultural competencies.

Recommendations

After analyzing the findings of this research study, the following recommendations were formulated:

1. Vocational agriculture teachers should continually help students to develop respect for each other while they show equal respect for all students. Teachers should instill the attitude among the male students that female students are a very beneficial part of the program. Also, female students should be urged to express an interest and perform at their highest levels so they will gain appropriate respect. It is important that teachers maintain an atmosphere discouraging students attempting to take advantage of others.
2. Vocational agriculture teachers should include appropriate career guidance teaching units during each year of instruction for all students. Teachers should cooperate with other school personnel, including counselors, curriculum directors, vocational administrators, etc., in developing occupational teaching units, planning career days, and preparing displays concerning agricultural career opportunities.
3. Vocational agriculture teachers should use all available media to inform nonvocational agriculture students and other important clientele that an education in agriculture will benefit both female and male students. Students not enrolled in vocational agriculture and not having an interest in agricultural careers occasionally have misconceptions regarding the role of female student participation in agriculture. Student peer pressure and misinformation may restrict educational opportunities in agriculture for female students. Parents, school personnel, farmers, ranchers, business people, and other adults and young people influence the image vocational agriculture has in the community. Teachers should involve female students in all activities and include them when informing the people in the community concerning

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the program.

4. Vocational Agriculture teachers should expect students to perform all agricultural activities within their mental and physical capabilities. Teachers should not make an issue of the fact that a stigma may exist as to what activities a male or female student can perform. If female students are given the opportunity and encouragement to perform agricultural skills, they will gain confidence in their knowledge and ability and male students will realize that females can perform tasks equally.
5. It is very important to have open discussions among the administrators and faculty concerning the enrollment of students according to interests, employment desires, and future educational objectives. Vocational agriculture teachers and females enrolled in the program need to assure administrators that vocational agriculture training is important to female students. Accomplishments of females while enrolled in vocational agriculture and their favorable comments to the administrators after graduation will assist in changing their attitudes.
6. The Texas Education Agency staff, teacher educators, and vocational agriculture teachers should continue to project a positive attitude toward providing vocational agriculture programs which meet the needs of all students. Programs developed around this premise should be conducted at district, area, and state inservice meetings. Teacher educators are an important link in teaching the proper attitude which should exist toward female vocational agriculture students. This attitude should not only be projected on college campuses, but also when supervising student teachers and when consulting with experienced vocational agriculture teachers. Texas Education Agency Area Vocational Agriculture Consultants have the opportunity to consult with all school personnel and have a one-on-one association with the vocational agriculture teachers. Consequently, they can have a tremendous influence on school personnel and teachers in assuring them that vocational agriculture is an acceptable program for females.
7. School administrators and vocational agriculture teachers should analyze the problem of inadequate restroom facilities. The accessibility and/or adequacy of restroom facilities for female students should be determined. Should this problem exist, the administrators will need to secure funds to remodel or have an adequate facility constructed. If remodeling or construction is not immediately feasible, temporary facilities should be provided or locks should be installed so males and females can use the same facility.
8. Vocational agriculture teachers need to treat all students as equals. The teacher should allow students to learn according to their mental and physical abilities. It is important to inform the students that they must dress appropriately when performing certain livestock and mechanical skills.
9. Problems with curriculum materials can be alleviated by informing everyone involved in preparing curriculum materials to include female students in illustrations, word phrases, and agricultural career opportunities. When teachers, teacher educators, state staff members, and teaching materials center personnel revise or prepare new teaching materials they must recognize and correct this problem.

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TEACHING VOCATIONAL AGRICULTURE AS PERCEIVED BY VOCATIONAL AGRICULTURE STUDENTS

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INTRODUCTION

Research related to the supply and demand of vocational agriculture teachers has focused on why teachers leave the profession and on why agricultural education students do no enter the profession. But where do the agricultural education students and the teachers come from? The most logical answer is from our high school programs of vocational agriculture. Students start making decisionn about their career long before they make the final decision. All individuals are different; therefore, they can be influenced at different times in their lives. Faulks (1969) found that one-third of the subjects (agricultural education graduates) in his study of teacher recruitment had decided in high school to enter agricultural education. By the time they were college freshmen, another one-third had decided to enter agricultural education. Hoerner (1965) found that 26 percent of all agricultural education graduates were influenced most by their vocational agriculture instructor because of the close student-teacher relationship.

These findings suggest that high school vocational agriculture students have a close student-teacher relationship and that the vocational agriculture instructor has considerable influence over his students. Froehlich (1968) found that 11 percent of the students entering agricultural education were influenced by their vocational agriculture instructor. The influence of the vocational agriculture instructor was again acknowledged by Faulks (1969) when he stated that the person most influential in recruiting teachers was the vocational agriculture instructor.

Another interesting fact about vocational agriculture teachers is their background. Phelps (1969) found that 88 percent of the vocational agriculture teachers who taught for six years or less had vocational agriculture in high school and 78 percent were involved in Future Farmers of America. Hoerner (1965) found that 89 percent of the vocational agriculture instructors teaching were reared on a farm. He also found that 53 percent had one or more semesters of vocational agriculture in high school and 33.4 percent had seven or eight semesters.

OBJECTIVES OF THE STUDY

The purpose of this study (Sprouse, 1981) was to determine the degree to which high school senior vocational agriculture students perceive selected roles and responsibilities of their vocational agriculture teachers as encouraging or discouraging a career in agricultural education. The specific objectives of the study were to:

1. Identify selected background characteristics of Iowa high school seniors enrolled in vocational agriculture in the

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southeast district.
2. Identify those factors that senior vocational agriculture students perceive as encouraging them to enter agricultural education.
3. Identify those factors that senior vocational agriculture students perceive as discouraging them from entering agriculture education.
4. Determine the relationship between selected student characteristics and students' perceptions of teacher responsibilities that encourage or discourage a career in agricultural education.

METHODS AND PROCEDURES

This research employed explanatory descriptive procedures with a causal-comparative design (Borg and Gall, 1979). The target population consisted of all seniors enrolled in vocational agriculture in the Southeast District of Iowa. A cluster sampling procedure was used to select participants for the study. The 42 high school vocational agriculture programs in the district served as the unit of sampling. A random sample of 20 schools was selected from the sampling frame of 42 schools. Then, all senior vocational agriculture students in the 20 selected schools were asked to participate in the study.

The questionnaire used to collect data for this study consisted of two parts: (1) a section to elicit personal background data on the students and (2) a section to determine students' perceptions of the effects of selected job responsibilities on their decisions to pursue a career in agricultural education. The questionnaire consisted of 55 situations indicating selected roles and/or responsibilities of the vocational agriculture teacher. Respondents were asked to indicate on a 11-point scale (1=strongly discourage a career in agricultural education, 6=neither encourage nor discourage a career in agricultural education, and 11=strongly encourage a career in agricultural education) the degree to which each of the situations encouraged them to or discouraged them from pursing a career in agricultural education.

The questionnaire items embodied three overall categories; therefore, individual items were summated to give factor scores. This procedure yielded three Likert-type scale scores and a composite scale score. Scale A - Personal, consisted of 24 personal factors related to the vocational agriculture teachers' roles and responsibilities. Two example instrument items making up the personal scale are: "Ability to work near his/her home;" and "Opportunity for a 12-month employment contract." Scale B - General Teaching Responsibility, consisting of 22 items related to the classroom and other structured instructional responsibilities of the teacher. Examples of instrument items making up this scale are: "Opportunity to apply classroom instruction to practical problems;" and "Overall cooperation received from vocational agriculture students." Scale C - FFA Responsibility, included nine factors related to the FFA advising/supervision responsibilities of the teacher. Instrument items constituting this scale included: "Responsibility in motivating students to participate in FFA Activities;" and "Role of Training FFA Judging Teams."

Internal consistency and inter-scale analysis were done on the three scales (as part of data analysis) and on the composite scale.

The reliability coefficients (Cronbach's internal consistency coefficient alpha) ranged from 0.85 to 0.96 for the scales, indicating the scales were internally consistent.

Teachers in the selected schools were sent a letter requesting their help in completing the study. Those teachers who consented were sent sufficient materials and instructions to collect the data. The teachers were asked to administer the instrument to the senior vocational agriculture students in a regularly scheduled vocational agriculture class. These procedures resulted in usable data from 174 students in the 20 selected schools.

As reported earlier, students responded to 55 perceptions on a scale of "1" to "11." These values were transformed to a "0" to "16" scale as follows:

Response Value	1	2	3	4	5	6	7	8	9	10	11
Transformed Value	0	3	5	6	7	8	9	10	11	13	16

This method of scoring "spreads out" the ends of the original scale. It assumes that there is a greater difference between a respondent who rated an item "1" and another who rated an item "2" than there is between two respondents, one of whom rated an item "5" and the other who assigned an item "6" (Warren, Klonglan, and Sabri, 1969).

Numerical values for the scales were computed by averaging the transformed responses of the items comprising the scales. This procedure yielded a value for each scale with the same numerical orientation (0 to 16 with a midpoint of 8) as the transformed value for each of the 55 individual items.

In analyzing the data, frequencies were computed for each variable. One-way analysis of variance was used to test for significant relationships between selected student variables and students' perceptions of vocational agriculture teaching. The Scheffé Test was employed to identify differences between all possible pairs of group means.

RESULTS

The results of inferential analysis will be preceeded by a profile of the respondents and a descriptive analysis of students' perceptions of a career in agriculture education.

A partial profile of the students who participated in this study follows:

1. A majority were males with a farm background.
2. They had older brothers and sisters, half of whom had attended college.
3. They had earned over $1,000 from their SOE programs and had received one or more visits per year from their instructor.
4. They had been in FFA for four years and held the Chapter Farmer Degree.
5. They had held FFA chapter offices or chaired committees, and they had received recognition through the FFA.
6. They acheived grades of "B" and "C" in vocational agriculture and in other high school courses.

7. They planned to finish high school with over half planning to enroll for post-secondary training. Most, however, did not plan to receive a baccalaureate degree.
8. They planned to enter agricultural occupations.

The 55 instrument items, indicating students' perceptions toward selected roles and responsibilities of the vocational agriculture teacher were categorized into three scales. The means and standard deviations for these scales are presented in Table 1. The FFA responsibility of the vocational agriculture teacher encouraged students most (scale mean of 8.94) to consider a career in teaching. To a lesser degree, the personal factor slightly encouraged students (scale mean = 8.79) to enter agricultural education. Finally, the general teaching responsibility of the vocational agriculture teacher was perceived as neither encouraging nor discouraging students (scale mean = 8.20). The composite mean score was 8.57, indicating that students' observations of the teacher's roles and responsibilities slightly encouraged them to enter teaching.

A look at individual items within the three scales provides more specific information.

Table 1. Means and standard deviations for Scales A, B, and C and Composite Scale.

Scale	Scale	Mean	S.D.
C	FFA Responsibilities	8.94	2.05
A	Personal Factors	8.79	1.75
B	General Teaching Responsibility	8.20	1.92
Composite Scale		8.57	1.74

An item within Scale A, "ability to work near his or her home" was rated as the factor most encouraging students to pursue a career in agricultural education. Other Scale A items that received high ratings were those related to interest in working with agriculture, contact with farmers, and opportunities found within the profession. Items involving out-of-the classroom assignments such as field trips and teaching in the shop received the highest rating in Scale B. From Scale C, items that dealt with the vocational agriclture/FFA farm, FFA activities, fairs and exhibits, community service projects, and motivating students in FFA activities were most highly rated. It is interesting to note that only 9 of the 55 items had means below 8.00. Seven of these constituted Scale B. Among the most lowly rated of these items were the role of preparing administrative reports, maintaining discipline on out-of-school activities, duties to be performed in the evenings and/or on weekends, and role of performing assigned school tasks (e.g., study hall monitor and school dance chaperone).

A major objective of this study was to examine the relationship between selected student characteristics and students' perceptions of teacher responsibilities. Nine student characteristics were used as independent variables in analysis of variance tests to determine these relationships.

Table 2 presents the means and F-ratios for the scales when students were grouped according to the grades received in vocational agriculture. There were significant differences among two of the three scale means and among the composite means on the perceived degree of influence among the three "grade" groups. For each scale with a significant F-ratio, the means were higher for those students reporting "B" grades than for students reporting "C" grades. The mean of the "C" group tended to indicate less encouragement to students for entering teaching. In fact, the "C" students perceived general teaching responsibilities as slightly discouraging (mean = 7.83) them from pursuing agricultural education.

Table 2. ANOVA of student's perceptions classified by the grades received in vocational agriculture.

Scale	Group 1[a] mean	Group 2[a] mean	Group 3[a] mean	F-ratio
A - Personal Factor	9.02	9.16	8.27	4.95** (2>3)
B - Teaching Responsibility	8.22	8.55	7.83	2.42
C - FFA Responsibility	8.96	9.36	8.48	3.23* (2>3)
Composite Scale	8.67	8.94	8.12	3.93* (2>3)

[a] Group 1 = students reporting grades of A; Group 2 = students reporting grades of B; Group 3 = students reporting grades of C.

*Significant at the .05 level.

**Significant at the .01 level.

Table 3 presents the means and F-ratios for the three scales and the composite when students were classified by their average high school grades. Significant differences were observed among the three groups for the three scales and the composite scale. The Scheffé test indicated that the significant differences in the means occurred between Group 2 and Group 3 for each of the scales. In general, the data reveal that students in Group 2, who received "B" grades, perceived the roles and responsibilities of the vocational agriculture instructor as slightly encouraging them to enter agricultural education. Again, the "C" students perceived general teaching responsibilities as slightly discouraging them from entering agricultural education.

Table 3. ANOVA of students' perceptions classified by average grades received in all high school courses.

Scale	Group 1[a] mean	Group 2[a] mean	Group 3[a] mean	F-ratio
A - Personal Factor	9.09	9.20	8.35	5.17** (2>3)
B - Teaching Responsibility	8.35	8.61	7.78	3.98* (2>3)
C - FFA Responsibility	8.95	9.35	8.53	3.38* (2>3)
Composite Scale	8.76	8.98	8.14	4.99** (2>3)

[a] Group 1 = students reporting grades of A; Group 2 = students reporting grades of B; Group 3 = students reporting grades of C.

*Significant at the .05 level.

**Significant at the .01 level.

Data in Table 4 reveal means and F-ratios for students' perceptions classified by whether or not they held an FFA office. The F-ratio for the FFA responsibility factor was significant at the .01 level. The F-ratios for the other scales were not significant at the .05 level. This indicates that students who had held an FFA office were more encouraged by FFA responsibilities of the teacher to enter agricultural education than those students who had not held an FFA office. None of the means were below 8.00, indicating that teacher responsiblities did not discourage students from entering agricultural education.

Table 4. ANOVA of students' perceptions classified by whether or not they had held an FFA office.

Scale	FFA Office Held? Yes	FFA Office Held? No	F-ratio
A - Personal Factor	9.05	8.58	3.16
B - Teaching Responsibility	8.39	8.05	1.32
C - FFA Responsibility	9.38	8.57	6.92**
Composite Scale	8.83	8.36	3.16

**Significant at the .01 level.

Table 5 reveals that means for all the scales were above 8.00, indicating that on the average, whether or not a student chaired a committee, he or she was at least slightly encouraged to enter agricultural education. It should be noted that the F-ratio associated with Scale C, FFA Responsibilities, was significant at the .05 level. This would indicate that those students who had chaired a FFA committee perceive the FFA responsibilities of the vocational agriculture teacher as encouraging them to enter agricultural education.

Table 5. ANOVA of students' perceptions classified by whether or not the student had chaired a FFA committee.

Scale	Chaired Committee Yes	 No	F-ratio
A - Personal Factor	8.98	8.54	2.67
B - Teaching Responsibility	8.22	8.19	.01
C - FFA Responsibility	9.27	8.49	6.32*
Composite Scale	8.71	8.38	1.46

*Significant at the .05 level.

Data in Table 6 show that there were differences between student groups in their perceptions of the influence of the FFA responsibility factor when the students were grouped by whether or not they had received FFA recognition. Students who had received an FFA award by participating in a contest and/or receiving a FFA award were more encouraged (mean = 9.14) to enter teaching than students who had not received FFA recognition (mean = 7.98). The F-ratio of 8.28 indicates a highly significant difference between these means. No significant relationship was observed between FFA recognition and the other factors.

Table 6. ANOVA of students' perceptions classified by whether they had received FFA recognition.

Scale	FFA Recognition? No Recognition	 Recognition	F-scale
A - Personal Factor	8.25	8.91	3.57
B - Teaching Responsibility	7.78	8.29	1.72
C - FFA Responsibility	7.98	9.14	8.28**
Composite Scale	8.01	8.69	3.80

**Significant at the .01 level.

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Data in Table 7 reveal significant differences among groups of students in their perceptions of the influence of the personal factor when grouped by highest educational plans. The students whose highest educational plans were to attend a trade school, community college, or some institution for an associate degree, were more encouraged (mean = 9.07) by the personal factors than those students who only planned to complete high school (mean = 8.39).

Table 7. ANOVA of students' perceptions classified by the highest educational plans.

Scale	Group 1[a] mean	Group 2[a] mean	Group 3[a] mean	F-ratio
A - Personal Factor	8.39	9.07	9.01	2.94* (2>1)
B - Teaching Responsibility	7.90	8.52	8.30	1.84
C - FFA Responsibility	8.65	9.35	8.77	2.13
Composite Scale	8.23	8.89	8.6[illegible]	2.49

[a] Group 1 = plan to finish high school; Group 2 = plan to attend trade school, community college, or receive an associate degree; Group 3 = plan to attend four-year college or university.

*Significant at the .05 level.

Additional analysis of variance tests revealed no significant relationship between students' perceptions of teacher responsibilities that encourage or discouraged a career in agricultural education and the following student variables: (1) supervised occupational experience (SOE) earnings, (2) number of SOE visits per year by the vocational agriculture teacher, and (3) occupational goals.

The following recommendations are based on the findings of this study:

1. Students who have "B" average grades in vocational agriculture and in high school should be more heavily recruited than "C" students as prospective vocational agriculture teachers.
2. Students who have been members of the FFA, have participated in FFA contests, and have been officers in the organization should be identified and encouraged to enter agricultural education.
3. Students whose educational plans are to attend a post-secondary institution and earn less than a baccalaureate degree should be encouraged to enter agricultural education (and, correspondingly, to earn a baccalaureate degree).
4. Vocational agriculture teachers should attempt to portray their job roles and responsibilities in a realistic light

and to identify those students who are encouraged by their portrayal. The students should then be encouraged further to enter agricultural education.

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CHARACTERISTICS AND DIMENSIONS OF PROGRAM IMPROVEMENT IN AGRICULTURAL EDUCATION

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INTRODUCTION

Each year more than 800 vocational education program improvement projects totalling more than $20,000,000 are funded by and administered through the state research coordinating units. These projects are completely or at least partially supported with funds from Subpart 3--Program Improvement and Supportive Services of the Education Amendments of 1976 (PL 94-482). These projects consist of applied research findings to (1) improve curriculum materials and develop training programs for new careers and occupations; (2) exemplary and innovative activities to improve vocational education programs in urban and rural areas, programs for the limited English-speaking, establishment of cooperative arrangements between public education and manpower agencies, and reduction of sex bias; and (3) development and dissemination of new curriculum materials. Typically, these projects are one year or less in length, about $25,000 in size, conducted by college and university staff or local schools, result in curriculum or supplemental training programs, and address all aspects of vocational education.

The agricultural education community can take advantage of this source of funds as an opportunity to conduct applied research, develop and expand programs, and develop or update curriculum. Agricultural educators in some states have exploited this source of funds more than others.

The National Center for Research in Vocational Education has acquired descriptions of all state-administered program improvement activities conducted during the past five years. These program descriptions have been indexed with ERIC terms and entered into a data base which is publicly accessible through the Bibliographic Retrieval Services (BRS). The data base now contains over 4,000 project descriptions--a wealth of information about program improvement in all aspects of vocational education, including agricultural education.

The data provide an excellent audit trail for program improvement activities in agricultural education during the past five years. The data base should be consulted before any new program improvement activity is undertaken to determine whether the same or similar work may have been undertaken somewhere else or whether it is desirable to use previous research or development as a foundation upon which to build. The data base also is a fertile source of information for future graduate and faculty research.

This analysis provides an added dimension to the knowledge about agricultural education program improvement. Much of the activity described in this data base is not reported in ERIC or any other education information system and is lost as a contribution to the cumulative knowledge in the agricultural education field. Agricultural educators need to be kept informed of all of the program improvement activities conducted by others; learn how to access this information; and discover how to apply, adapt, or expand it to the benefit of their programs.

OBJECTIVES

The vocational education program improvement data base documents research and development activities which have been conducted in the agricultural education field during the last five years. This information provides a useful dimension in understanding the direction and the progress that agricultural education has made in program improvement. The objectives of this analysis are:

1. To familiarize agricultural educators with the data base, with program improvement activities, and the potential application of the research and development project information.

2. To determine the number of agricultural education program improvement projects and identify who is conducting these projects.

3. To determine the nature of the problems being addressed and the products and/or outcomes.

PROCEDURES

The data base of state-administered program improvement projects has been compiled by National Center Clearinghouse staff from descriptive abstracts provided by state research coordinating units. The abstracts served as the data source for this review and analysis. The basic steps taken in preparing this analysis are:

1. Abstracts were reviewed by Clearinghouse staff to make sure that all bibliographic and funding information was complete. If some information was missing, states were asked to supply it.

2. Lists of projects were compiled and sent to research coordinating unit directors for verification.

3. Key variables were edited and indexed in the ERIC format.

4. Key variables were coded for computer analysis (i.e., state, fiscal year, legislative sectionnumber, project beginning and ending dates, amountof funding, recipient institution, legislative and federal priorities addressed, educational level, target population, vocational service area, and products or outcomes).

5. Several of the data fields in the program improvement data base were searched. All projects relating to agricultural education were identified and the unique "summing" capability of the data base was used to provide project number and funding information for the categories of state, type of agency conducting the work, product or outcome, and topical area.

FINDINGS

The findings are based upon data drawn from program improvement project abstracts supplied by state research coordinating units. Discussion about agriculture related state-administered program improvement is clustered as follows:

- Agriculture related program improvement projects funded--FY 1978-1982.
- Agriculture state program improvement projects by state.
- Recipients of project funding.
- Topical areas addressed by projects.
- Products and outcomes of projects.

Table 1 shows the number of projects and the amount of funding for agriculture related program improvement conducted by fiscal year compared to the total number of projects and the total funds obligated.

- For the five years, 224 agriculture related projects were reported for which $7,501,468 was obligated.
- The total amount of funds obligated for agriculture related projects ranged from $970,722 in FY 1978 to $1,930,460 in FY 1980.
- Agriculture related projects accounted for 7.6 percent of the total funding.
- The average size of an agriculture related project was $33,489 compared to $26,588 for all projects.

The erratic and wide ranging number of projects that were funded and the total expenditure from year to year was likely influenced by the topics of the "requests for proposal" issued by the state research coordinating units. The larger average size of projects for agriculture is influenced by the two or three large projects contracted to operate curriculum centers.

Table 2 provides the number of agriculture related state administered program improvement projects and amount of funds obligated for each state.

Table 1

AGRICULTURE RELATED PROGRAM IMPROVEMENT PROJECTS FUNDED--FY 1978-1982

Fiscal Year	Number of Projects		Amount of Funding		Percentage of Funding
	All	Agri-culture	All	Agri-culture	
1978	755	40	18,905,159	970,722	5.1
1979	810	52	20,158,728	1,610,093	8.0
1980	845	55	23,514,466	1,930,460	8.2
1981	909	49	24,629,348	1,640,078	6.7
1982*	414	28	11,514,849	1,350,115	11.7
TOTALS	3,713	224	98,722,550	7,501,468	7.6

*Project tally for FY 1982 is incomplete.

- Agriculture related program improvement projects were funded in 40 states and territories over the five-year period.
- The total number of projects funded in individual states ranged from zero in 15 states and territories to 27 projects in Illinois.
- The amount of funds which were obligated to agriculture related projects ranged from zero in 15states to $1,821,576 in Texas.

The wide variation in the number of projects and amount of funding across states should not necessarily be equated with the amount of effort put forth by agricultural educators to secure funds. Several state departments of education have established policies which control the size of projects and the priority areas.

Table 3 shows the institutions or agencies that received funding to conduct the program improvement projects.

- Over 68 percent (153 projects) of the projects were conducted by four year colleges and universities, and community and junior colleges.

Table 2

AGRICULTURE RELATED STATE PROGRAM IMPROVEMENT PROJECTS BY STATE

State or Territory	Number of Projects	Amount of Funding
Alabama	0	-
Alaska	2	4,856
Arizona	2	15,000
Arkansas	2	66,635
California	11	326,207
Canal Zone	0	-
Colorado	1	45,000
Connecticut	4	100,637
Delaware	1	12,580
District of Columbia	0	-
Florida	2	26,667
Georgia	2	6,000
Guam	2	21,861
Hawaii	1	10,000
Idaho	2	67,777
Illinois	27	1,014,595
Indiana	5	93,503
Iowa	4	221,393
Kansas	17	150,425
Kentucky	6	108,063
Louisiana	5	70,411
Maine	0	-
Maryland	3	103,850
Massachusetts	0	-
Michigan	0	-
Minnesota	3	15,755
Mississippi	5	1,537,764
Missouri	9	453,257
Montana	2	6,400
Nebraska	2	31,309
Nevada	0	-
New Hampshire	0	-
New Jersey	1	17,757
New Mexico	0	-
New York	4	172,885

Table 2 (continued)

State or Territory	Number of Projects	Amount of Funding
North Carolina	0	-
North Dakota	11	88,450
Ohio	0	-
Oklahoma	6	255,232
Oregon	1	12,885
Pennsylvania	24	324,344
Puerto Rico	0	-
Rhode Island	0	-
South Carolina	7	66,750
South Dakota	4	7,103
Tennessee	0	-
Texas	20	1,821,576
Utah	1	17,000
Vermont	2	24,359
Virgin Islands	0	-
Virginia	8	104,246
Washington	2	13,410
West Virginia	1	3,242
Wisconsin	6	31,844
Wyoming	6	30,440
TOTALS	224	7,501,468

- Only nine projects were conducted by research, development or curriculum agencies, but they accounted for over 20 percent of the funds.

- Local and intermediate education agencies received slightly more than 13 percent of the funds.

By far the largest proportion of program improvement activity is being awarded to 4-year colleges and universities. This is not surprising in that these are the centers of proposal development and research expertise. The inflated average size ($169,426) of projects conducted by research, development, or curriculum agencies can be contributed to two or three $300,000 plus projects to operate curriculum centers.

The topical areas addressed by the agriculture related program improvement projects are shown in Table 4.

Table 3

RECIPIENTS OF PROJECT FUNDING

Institution or Agency	Number of Projects	Amount of Funding	Percentage of Funding
College and University	139	4,396,051	58.6
Local Education Agency	35	855,707	11.4
State Education Agency	15	207,810	2.8
Community College, Junior College	14	277,193	3.7
Research/Development/ Curriculum	9	1,524,842	20.3
Intermediate Education Agency	5	148,190	2.0
Business/Industry/ Labor	3	65,787	.9
Professional Associations	1	3,000	.1
Other	3	22,888	.2
TOTALS	224	7,501,468	100.0

o The largest percentage (65.9 percent) of the funding was for curriculum and instructional materials.

o Sex equity and special needs (handicapped, disadvantaged, and gifted) received slightly more than 13 percent of the funds. Typical projects are:

(a) To produce a "Curriculum for Dairy Cattle Management and Feeding." Graduate students and agriculture instructors will be employed to review the literature, address needs, and develop selected course outlines and curriculum guides in the area of feeding and management of dairy calves and heifers.

Table 4

PROBLEM AREAS ADDRESSED BY PROJECTS

Problem Area	Number of Projects	Amount of Funding	Percentage of Funding
Curriculum	114	4,941,229	65.9
Sex Equity	5	604,842	8.1
Special Needs (Handicapped, Gifted, and Disadvantaged)	13	384,852	5.1
Career Development	11	199,317	2.6
Administration and Policy Formulation	9	188,387	2.5
School/Community/Industry Linkage	9	170,819	2.3
Dissemination	7	147,302	2.0
Evaluation	14	143,587	1.9
Rural Education	7	132,370	1.8
Teacher Education and Personnel Development	15	131,355	1.7
Adult Education	3	99,323	1.3
Other	12	293,464	4.8
TOTALS	224	7,501,468	100.0

Twenty copies of each course outline and curriculum guide will be produced and made available to local agriculture personnel.

(b) "Dissemination and Implementation of a Farm Business Management Analysis Program for Adult and Young Farmers in Vocational Agriculture." A series of five bimonthly, four-hour workshops will be held in each of six districts to disseminate findings and materials developed in a previous project to 75 percent of adult and secondary vocational agriculture teachers. An advisory committee will plan and schedule the series of workshops and implementation procedures. Project staff will develop instructional materials, sample problems, and teaching plans for the workshops. An evaluation will be conducted and results reported.

(c) "Competency Levels in Agricultural Mechanics for Preservice and Inservice Teachers of Vocational Horticulture." The frequency of use of agricultural mechanics competencies needed or developed by preservice and inservice horticulture teachers and those agricultural education majors who anticipate teaching horticulture will be surveyed. The frequency of use of agricultural mechanics competencies in their horticulture program, the need for such competencies, and their developmental degree of these competencies will be determined.

Table 5 shows the kinds of products which resulted from the projects.

- Nearly 62 percent of the funds (121 projects) were used to produce curriculum and instructional products.
- Over 17 percent of the funds (14 projects) were used to operate information systems and to distribute materials.
- Although there were 20 evaluation related projects, they received only about 2 percent of the funding ($6,583 each).

CONCLUSIONS

Several conclusions about the agriculture related state administered program improvement projects can be drawn from the information collected.

1. Agriculture is not being represented in the program improvement program in all states and territories. Less than three-fourths (40 states) of the states and territories reported that any agriculture related state administered program improvement projects were conducted during the five year period 1978 through 1982.

2. The average size of agriculture related program improvement projects is larger than the average size of all the projects. Agriculture related projects are nearly $7,000 larger on the average than projects in other areas.

3. Most of the agriculture related program improvement projects are conducted by 4-year and 2-year postsecondary institutions.

Table 5

PRODUCTS AND OUTCOMES OF PROJECTS

Product/Outcome	Number of Projects	Amount of Funding	Percentage of Funding
Curriculum and Instructional Products	121	4,646,380	61.9
Information Systems and Distribution of Materials	14	1,293,115	17.2
Training Programs and Workshops	13	269,639	3.6
Inservice Education	8	252,760	3.4
Research, Model Building, and Feasibility Studies	15	247,680	3.3
Information for Planning and Management	10	220,690	2.9
Evaluation, Needs Assessment, and Follow-Up	20	131,665	1.8
Handbooks, Guides, Analysis, and Literature Review	6	122,248	1.6
Career and Vocational Counseling	5	119,678	1.6
Placement and Employment Services	3	78,490	1.1
Other	6	96,226	1.6
TOTALS	224	7,501,468	100.0

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Four-year colleges and universities conduct 139 projects ($4,396,051) and community and junior colleges conducted 14 ($277,193) projects during the five year period.

4. The majority of the agriculture related program improvement funds were spent for curriculum and instructional materials. Nearly two-thirds of the funds and 121 projects produced curriculum and instructional products.

5. There is a wide variation in the number of agriculture related program improvement projects and amount of funding from year to year. The amount of funds devoted to agriculture related program improvement ranged from $970,722 in FY 1978 to $1,930,460 in FY 1980.

6. The average amount of funds per project varies widely from state to state. Average project funding ranges from as little as $1,775 to over $300,000.

QUESTIONS TO PONDER

The following are examples of questions generated by this analysis and which could contribute to a discussion of a research agenda for agricultural education:

1. Is agricultural education taking full advantage of the program improvement research and development program offered by state departments of education?

2. Why are only 40 states taking advantage of the program?

3. Are the agricultural education program improvement activities that have been conducted in the most important areas of need?

4. What do agricultural educators need to do to capitalize on past and present program improvement activities?

5. How can agricultural educators be kept apprised of this source of funds?

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A DISCUSSION OF RESEARCH RELATED TO PRESERVICE EDUCATION

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I am pleased to have the opportunity to discuss three research papers which impact the quality of preservice education. I would like to discuss each in the order of presentation and to make some conclusions about the state of the art.

"A Study To Determine The Grading Biases Of Agricultural Education Teacher Educators And Other Vocational Teacher Educators"

Dr. John Hillison

Much of the research in teaching concluded that the effects of the teacher accounts for the largest source of variance. More work should be done to answer questions dealing with an effective teacher. This study was a step in the right direction.

Although there was little information presented regarding the review of literature, there was sufficient connection between the problem and the nature of research. The paper, however, left several questions unanswered. Without a knowledge of the scope of the research project, I assumed this to be a staff study which was conducted without funding or a significant allocation of faculty time.

The Methods and Procedures section was very brief. When describing the videotapes, I would like to have known more about the length, setting, and the subject matter. Also, a report of the reliability coefficient for the two persons who coded the tapes would be beneficial. Did the teacher educators observe the first ten minutes of each micro-lesson or did they randomly enter the videotape? The number of teacher educators was very small and there is no indication of internal consistency within service areas. Were there more differences in grading between than among service areas?

The Results section was presented in a very straight forward manner. Perhaps an alternative table format would combine the Correlation Coefficients of the two groups into one table. (Table 1A) This would enable the reader to make direct comparisons between groups. What was the correlation coefficient for the category "Gives Criticism" as assigned by Agricultural Education Teacher Educators? Data were reported for only eleven of the nonverbal codes by Agricultural Education Teacher Educators. (Table 3A) Also, only fourteen of the 15 nonverbal codes were reported.

The Conclusions section was also very brief. The first seven conclusions appeared to be sound deductions from the data. However, there was some concern to conclude that students in methods courses receive higher grades when neither the sample populations or the

Table 1A

A Correlation of Verbal Interaction Categories and Grades Assigned By Vocational Teacher Educators

Category	Ag Ed	Other Voc Ed.
Asks questions	.69*	.16
Praises or encourages	.63*	.21
Student talk, response	.62*	-.12
Gives directions	.18	-.10
Student initiated talk	.12	-.21
Lectures	.04	.09
Accepts ideas of students	.02	.08
Accepts feelings	-.01	-.18
Silence or confusion	-.12	.06
Gives criticism	NR	.05

Table 3A

A Correlation of Nonverbal Interaction and Grades Assigned by Vocational Teacher Educators

Category	Ag Ed	Other Voc Ed.
Positive head nod	.41	.14
Positive facial expression	.39	.06
Positive eye contact	.30	.04
Positive gesture	.24	-.03
Positive body orientation	.21	-.05
Positive use of space	.16	.27
Positive vocal behavior	.10	.05
Negative body orientation	.07	.01
Negative vocal behavior	-.01	.16
Negative eye contact	-.01	.09
Negative use of space	-.07	.20
Negative head nod	NR	-.10
Negative gestures	NR	-.14
Negative facial expression	NR	-.20

videotaped lessons were controlled. Likely, more emphasis was placed on micro-teaching during the methods course. The ninth conclusion, a profile of factors . . . can be established, implies that there was a profile which influenced the assignment of grades. Yet much of the variance was not explained from this list of codes and there was a lack of agreement between vocational teacher educators.

The final conclusion goes beyond the results. Does the fact that because four agricultural teacher educators had a "greater agreement" than 8 other vocational teacher educators imply that "Good teaching" in Agricultural Education was not the same as "Good teaching" in other service areas? I do support the recommendation of the author calling for a larger sample with greater control.

"Agricultural Education Preservice Instruction for Teaching Handicapped Students"

Dr. Anthony T. Mallilo

One of the realities of teaching today is directing a very diverse group of students. This diversity comes from several categories including experience, sex, career aspirations (or the lack of the same), and physical or mental handicaps. Improving instruction for preservice teachers is an important activity which needs sound research data to provide direction.

This developmental project sought to assess the need for a new unit of instruction, develop the instrumentation, develop a unit of instruction, and conduct a quasi-experimental study. This is an ambitious undertaking for what appears to be a non-funded study. Perhaps too ambitious!

The methods and procedures section described the study but left me with some unanswered questions. When using small intact groups, a detailed description and comparison of the groups would be beneficial I would like to review the demographic information to gain a better understanding of the intact group. Random assignment of small intact groups will not account for differences which exist in the subjects. Were any of the subjects handicapped or have handicapped family members? Were the two groups different in less obvious ways such as their attitude toward handicapped persons?

Also, as a reader I would like to know more about the pretest. Was this the same as "assessment instruments (Kuder Richardson 21=.74)"? How many test items were included? What was the reliability coefficients and did they differ between the treatment and control group? Was the posttest "the same instrument" or a parallel form? What were the "appropriate statistical procedures" used when combining data from the 1981 Summer and Fall terms?

The Findings section focused on the comparison of pretest scores (Table 1) and posttest scores (Table 2) from the Fall term only. The discussion did not appear to include the 27 subjects from the Summer term or provide a rationale on why the data were not pooled. The discussion of procedures used to compare the instructors behavior was appreciated and added to my understanding of control. I would like to see the same data from the Summer term and, if appropriate, the pooled data from the 59 subjects.

"Attention and its Effects on Psychomotor Skill Development in Arc Welding"

Dr. Phillip Buriak

When applying Dr. Coppa's (1978) criteria regarding scholarship in quality and style, I found Dr. Buriak's paper to be one of the best that I have reviewed. It represents an effort to move from a theoretical to a clinical model with limited tendency for over-generalization. It is clearly written and specific without redundancy. Although the topic may not be a national priority or a federal mandate, it is one which was spawn from the teaching laboratory.

The Methodology section described the experiment in a way to allow and even encourage replication. The outcome measures of time, tensile strength, and number of electrodes are quantitative. The audio-tapes provided a check on instructor consistency. I did have a concern that the researcher was less than candid when reporting the total number of subjects and the number of subjects in each of the cells. I assumed at best there were 7 subjects in each of five cells and 8 in the remaining cell. When working with a small clinical model, was it necessary to use a parametric statistic? Perhaps means and standard deviation scores would be sufficient to communicate the findings.

The Conclusions section was well organized. I was interested in how the author can be sure "students can learn to divide their attention . . . for prolonged periods of time." I did appreciate the researcher concluding that the findings were in agreement with the theory of attention.

I must confess that I immediately identified with the research problem. However, even after using my interest as a covariant, I would like to replicate Dr. Buriak's work and to compliment a job that was well done.

Conclusions and Recommendations

I would like to compliment each presenter on focusing on an important research topic and following up by reporting their work to the profession. If the three papers are a sample of the research, then we can conclude that two-thirds of the research is dissertation research and one-third from staff studies. H. M. Hamlin (1930:18), as Editor of Agricultural Education chides us in his editorial with ". . . most of our published research has grown out of Master's and Doctor's theses. We have failed to set aside time for research . . ."

I believe Dr. Hillison's work would have been improved by adding Dr. Mallilo's OSIA technique as another criterion measure. Dr. Mallilo would have profited from adapting the control techniques found in Dr. Buriak's work. Dr. Buriak perhaps could have expanded his clinical model using Dr. Hillison's multi-service area approach. Dr. Richardson (1978:1) wrote in the introduction of the 1979 Directory of Research Interests In Agricultural Education that ". . . it is the hope that . . . the directory will improve . . . the articulation of research efforts . . ." We as a profession still have the persistent problem of a lack of articulated, programmatic and cooperative research.

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A Study to Determine the Grading Biases of Agricultural Education Teacher Educators and Other Vocational Teacher Educators

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INTRODUCTION/NEED FOR THE STUDY

All vocational teacher educators, including agricultural education teacher educators, must make evaluative decisions about the performance of preservice students they supervise. These decisions occur during role play situations, while micro-teaching, making video tapes, during student teaching and under other circumstances. Even the teacher educator who supervises student teachers for an institution that grades on a pass-fail basis must decide who passes and who fails.

Most teacher educators find it difficult to express the factors which influence the grades they assign to preservice students. When queried about what they consider important teacher educators reply in somewhat vague and almost trite expressions such as "well planned lessons" and "orderly classes."

This study operated from the premise that teacher educators need to know what most influences the grades they assign to students. A second assumption was that feedback on such influences or biases could be provided in both an organized and a statistical manner.

An additional area of examination was finding the emphasis teacher educators placed upon the use of verbal and nonverbal communication by preservice students. Woolfolk and Woolfolk (1974) concluded that verbal communication was more important than nonverbal communication. As a contrast Galloway (1974) concluded that nonverbal communication was more important than verbal, noting that negative nonverbal cues were particularly important.

OBJECTIVES OF THE STUDY

1. To determine the relationship between the use of verbal interaction by preservice students and grades assigned to them by agricultural education and other vocational education teacher educators.

2. To determine the relationship between the use of nonverbal interaction by preservice students and grades assigned to them by agricultural education and other vocational education teacher educators.

3. To compare the grades assigned to preservice students by agricultural education teacher educators and other vocational teacher educators.

4. To determine the influence of preservice students' sex upon grades assigned by agricultural education teacher educators and other vocational teacher educators.

5. To determine the influence of teacher educators' sex upon grades assigned.

6. To determine the influence of the course level of preservice students upon the grades assigned by agricultural education teacher educators and other vocational teacher educators.

7. To establish a profile of factors influencing the assignment of grades to preservice students by agricultural education and other vocational education teacher educators.

METHODS AND PROCEDURES

A total of 57 videotapes were made by agricultural education preservice students during the academic years of 1980-81 and 1981-82 at Virginia Tech for use in the study. The videotapes were made by students enrolled in the three levels of a junior introductory class, methods class, and student teaching. The videotapes were made by 21 female and 36 male students.

Upon completion of the videotaping two project staff members coded the tapes for both verbal interaction and nonverbal interaction. The staff member who coded for verbal interaction used the Flander's Interaction Analysis (Flanders, 1963) which contained 10 codes. The staff member who coded for nonverbal interaction used the Hillison-Crunkilton Nonverbal Code (Hillison and Crunkilton, 1978) which contained 15 codes. Both coders randomly selected one tape out of every 15 completed to recode for a reliability check.

After each videotape had been coded for both verbal and nonverbal interaction they were graded by a total of 12 vocational teacher educators (four females and eight males). Four of the teacher educators were in agricultural education, while two each were in other vocational education services areas of business education, home economics education, industrial arts education, and marketing education. Each teacher educator selected for the study had experience teaching undergraduate methods courses and/or supervising student teachers. All teacher educator participants had previous experience assigning grades to such preservice students in their respective service areas.

Each teacher educator observed ten minutes each of ten randomly assigned videotapes. At the completion of each videotape's ten minute observation a grade with a range of A to F and possibly pluses and minuses was assigned individually to that videotape. The grading system used at Virginia Tech of A=4.0, A-=3.7, etc. was used.

The data were analyzed by using the Pearson Product-Moment Correlation Coefficient and multiple correlation. The Pearson Product-Moment Correlation determined the relationship between each code (both verbal and nonverbal) and the grade assigned by teacher educators. In addition, means and one-way analysis of variance were also used.

RESULTS: FINDINGS, CONCLUSIONS, RECOMMENDATIONS

Findings

The highest relationship for verbal interaction with grades assigned by agricultural education teacher educators was "asks questions" with an r value of .69. Table 1 reports the other verbal interactions. A relatively high total multiple r of .79 was found for the agricultural education teacher educators.

Table 1
Relationships of Verbal Interaction with Grades
Assigned by Agricultural Education Teacher Educators

Code	Simple r^a
Asks questions	.69*
Praises or encourages	.63*
Student talk, response	.62*
Gives directions	.18
Student initiated talk	.12
Lectures	.04
Accepts ideas of students	.02
Accepts feelings	-.01
Silence or confusion	-.12

*p $<$.05 with d.f. of 10
^{a}Total multiple r = .79

The highest relationship for verbal interaction with grades assigned by vocational education teacher educators other than agricultural education was "praises or encourages" with an r value of .21. A total multiple r of .40 was found for the other vocational teacher educators. Table 2 reports the other verbal interactions.

The highest relationship for nonverbal interaction with grades assigned by agricultural education teacher educators was "Positive head nod" with an r value of .41. The total multiple r for agricultural education teacher educators was .80. Table 3 reports the other nonverbal interactions.

Table 2
Relationships of Verbal Interaction with Grades
Assigned by Other Vocational Education Teacher Educations

Code	Simple r[a]
Praises or encourages	.21
Asks questions	.16
Lectures	.09
Accepts ideas of students	.08
Silence or confusion	.06
Gives criticism	.05
Gives directions	-.10
Student talk, response	-.12
Accepts feelings	-.16
Student initiated talk	-.21

[a] Total multiple r = .40

Table 3
Relationships of Nonverbal Interaction with Grades
Assigned by Agricultural Education Teacher Educators

Code	Simple r[a]
Positive head nod	.41
Positive facial expression	.39
Positive eye contact	.30
Positive gesture	.24
Positive body orientation	.21
Positive use of space	.16
Positive vocal behavior	.10
Negative body orientation	.07
Negative vocal behavior	-.01
Negative eye contact	-.01
Negative use of space	-.07

[a] Total multiple r = .80

The highest relationship for nonverbal interaction with grades assigned by other vocational education teacher educators was "Positive use of space" with an r value of .27. The total multiple r for other vocational teacher educators was .49. Table 4 reports the other nonverbal interactions.

Table 4
Relationships of Nonverbal Interaction with Grades
Assigned by Other Vocational Education Teacher Educators

Code	Simple r[a]
Positive use of space	.27
Negative use of space	.20
Negative vocal behavior	.16
Positive head nod	.14
Negative eye contact	.09
Positive facial expression	.06
Positive vocal behavior	.05
Positive eye contact	.04
Negative body orientation	.01
Positive gesture	-.03
Positive body orientation	-.05
Negative head nod	-.10
Negative gesture	-.14
Negative facial expression	-.20

[a] Total multiple r = .49

When the grades assigned by the teacher educators were compared, a significant difference was found. The agricultural education teacher educators assigned a mean grade of 3.03 compared to the other vocational education mean assigned grade of 2.70. Analysis of variance produced an F ratio of 5.699 which was significant at the .05 level.

A significant difference was also found between the grades assigned to male and female students. The mean grade assigned to male students was 2.69, while the mean grade assigned to female students was 3.01. Analysis of variance produced an F ratio of 5.579 which was significant at the .05 level.

When the grades assigned by male teacher educators was compared to the grades assigned by female teacher educators, a non significant F ratio of 2.302 was found. The mean grade assigned by male teacher educators was 2.89, while the mean grade assigned by female teacher educators was 2.67.

A significant F ratio of 15.051 ($p < .001$) was found when the three levels of students' course enrollment were compared. The mean grade assigned to junior introductory-level students was 2.4, the mean grade assigned to students in the methods course was 3.1, while the mean grade assigned to student teachers was 2.5. A Scheffe' post hoc test found significant difference between the methods' grade and the other two grades.

CONCLUSIONS

1. The verbal categories of "Asks questions," "Praises or encourages," and "Student talk, response" had the highest relationships with grades assigned by agricultural education teacher educators.

2. The verbal categories "Praises or encourages" and "Asks questions" had the highest relationships with grades assigned by other vocational education teacher educators.

3. The nonverbal categories "Positive head nod," "Positive facial expression," and "Positive eye contact" had the highest relationships with grades assigned by agricultural education teacher educators.

4. The nonverbal categories "Positive use of space" and "Negative use of space" had the highest relationships with grades assigned by other vocational education teacher educators.

5. Agricultural education teacher educators assigned higher grades to students than did the other vocational teacher educators.

6. Female students received higher grades than did the male students.

7. Male and female teacher educators did not assign statistically different grades.

8. Students in the methods' course were assigned higher grades than students in either the introductory course or those student teaching.

9. A profile of factors influencing the assignment of grades to preservice students by both agricultural education and other vocational education teacher educators can be established.

10. Teacher educators in agricultural education had greater agreement than did the teacher educators in other service areas.

RECOMMENDATIONS

1. Further examination should be made to investigate why female students received consistently higher grades from both male and female teacher educators.

2. Examination should be made to investigate the lack of grading consistency on the part of other vocational education teacher educators.

3. The study should be repeated with vocational teacher educators at other universities. Students with majors in all service areas should be represented.

4. The study should be repeated with teacher educators from areas other than vocational education. Students representing various majors within education should be represented.

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Agricultural Education Preservice Instruction For Teaching Handicapped Students

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2. Assess the need for a new unit of instruction via the testing of preservice teachers who have completed the Methods of Teaching High School Vocational Agriculture course and their student teaching practicum.

3. Develop a unit of instruction on teaching handicapped students to be incorporated into the methods course.

4. Determine whether preservice students taught the new unit have higher assessment scores than preservice students taught the current unit being utilized in Ag Ed 12v at The Pennsylvania State University.

Methodology

An intact group of 27 students enrolled in Ag Ed 12v during the 1981 summer term were randomly divided into two groups. Both groups were pretested one week after the beginning of the term to assess their cognitive knowledge regarding the teaching of handicapped students.

At the beginning of the sixth week of the term, the control group was instructed by means of the current unit being utilized in methods of teaching high school vocational agriculture. Following five hours of instruction, the control group was posttested with the same instrument utilized for the pretest. Students also were requested to complete the unit evaluation form.

During the 1981 fall term a repetitive measure of the experiment was conducted. Unlike the previous term, students were able to enroll in either of two sections of the methods course. While it was preferable for the researcher to randomly assign students from the total group as in the summer term, this was not possible. Therefore, the two intact groups were used: one randomly assigned as the control group (11 students), the other as the experimental group (12 students). Identical units, instructor, assessment instruments (Kuder Richardson 21=.74), and unit evaluation form were utilized during the fall term as in the summer term. The major difference was that the units of instruction were not taught for 2.5 hours on two consecutive days, but

Table 2 indicates that a t-value ($t=-3.50$; $df=34$, $p<.05$) was calculated and the null hypothesis was rejected. From the data shown, it can be concluded that preservice teachers instructed with the new unit scored significantly higher on the posttest than did the preservice teachers instructed by means of the current unit of instruction on special needs students. Since the two groups were not significantly different prior to the treatments (pretest) and were taught by an instructor whose behaviors did not differ significantly, it can be concluded that the material presented via the new unit was significantly better than the current unit for increasing the knowledge level of the participants on the posttest.

Table 2. Posttest Scores on Knowledge of the Handicapped Test for Control and Experimental Groups.

Group	n	Mean	SD	t-value
Control	14	61.4	10.2	-3.50*
Experimental	22	73.0	9.3	
Total	36	68.5	11.1	

*p=.001.

Educational Importance of the Study

According to Dahl, Appleby and Lipe (1978), many of the 6.8 million handicapped people between ages 6 and 19 who are now entitled to a free, appropriate education will be mainstreamed into the regular classrooms. Many will also look to vocational education for the same reasons that non-handicapped students do, to prepare for meaningful jobs and to develop salable skills. In view of this, it is inevitable that teachers of agriculture will at some point in their career be responsible for the education

ATTENTION AND ITS EFFECTS ON PSYCHOMOTOR SKILL DEVELOPMENT IN ARC WELDING

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INTRODUCTION

Attention may be defined as a direct focusing of the mind upon some task or activity. Most tasks or activities possess varying degrees of complexity which require the mental processing of many inputs in order to perform satisfactorily. A classical topic for psychological investigation has concerned the division of attention among these concurrent inputs.

Psychological studies of attention have been directed primarily at the perception and the processing of various inputs as quantified by some measure of human psychomotor performance. Many of these investigations have involved the use of such nonsensical inputs and outcome measures as tapping behaviors, letter and/or symbol recognition, and auditory and/or visual signaling (Colavita, 1971; Mowbray, 1954; and Treisman, 1970). Few studies have dealt with conditions directly applicable to the educational practitioner. Vocational educators, who provide instruction for the development of human psychomotor performance, might be able to improve their effectiveness if psychological research had been directed to the improvement of performance rather than to the perception and processing of inputs as measured by performance.

More specifically, research involving conditions of attention and human psychomotor performance must be conducted on the level of the practitioner rather than on the theoretical level of the psychologist before implications for skill instruction by vocational educators can be justified. An initial investigation in the arc welding area of agricultural mechanics seemed justifiable.

Beginning students are required to divide their attention between concurrent visual and auditory input sources during supervised practice of an arc welding task. While performing the welding task, visual inputs must be perceived and processed, then response is given through performance. The agricultural mechanics instructor has traditionally provided additional auditory inputs by verbally directing the student to shorten the arc, reduce lead angle, and increase travel speed during the performance. Thus, visual inputs; the observation by the student of the actual welding performance as it occurs, and auditory inputs; the verbal commands of the instructor, are occurring simultaneously. The student is placed in a simultaneous demand situation which requires the perception, processing, and response to concurrent inputs; attention is divided.

PURPOSE, OBJECTIVES, AND HYPOTHESES

The purpose of this investigation was to study instruction under conditions of divided and undivided attention and its effect on human performance of a complex psychomotor skill; flat downhand position arc welding.

Objectives

The specific objective was to study arc welding instruction under conditions of divided and undivided attention and its effects on arc welding performance. More specifically, when students were subjected to the simultaneous inputs of traditional arc welding instruction (divided attention) versus arc welding instruction where inputs were provided sequentially (undivided attention), what effects on arc welding performance would be observed? Further, the effects of variable pre-exposures to the traditional divided attention condition of related instruction (oxy-acetylene welding and/or hot and cold metal working) was investigated to determine if students could learn to divide their attention.

Hypotheses

Research derived hypotheses were:

1. Students receiving arc welding instruction under the undivided attention condition will produce welds of higher quality more efficiently than students receiving like instruction under the divided attention condition.

2. When previously exposed to related instruction (oxy-acetylene welding and/or hot and cold metal working) under the divided attention condition, students can learn to divide their attention between concurrent inputs. No decrement in welding performance will be observed when compared with students receiving instruction under the undivided attention condition.

The statistical hypotheses tested (alpha = .10) were:

1. When students are given instruction under a simultaneous demand situation (divided attention) versus a sequential demand situation (undivided attention), there is no significant difference in welding performance as measured by efficiency.

2. When students are given instruction under a simultaneous demand situation (divided attention) versus a sequential demand situation (undivided attention), there is no significant difference in welding performance as measured by quality.

3. When students are given instruction under a simultaneous demand situation (divided attention) versus a sequential demand situation (undivided attention), there is no significant difference in welding performance as measured by an efficiency/quality ratio.

4. When students receive variable exposures (0 weeks, 3 weeks, 6 weeks) under the divided attention condition of related instruction (oxy-acetylene welding and/or hot and cold metal working) prior to the administration of the treatment condition, there are no significant differences in welding performance as measured by an efficiency/quality ratio.

METHODOLOGY

Sample Subjects

The sample consisted of all students registered and participating in the three class sections of Agricultural Mechanization and Systems 240, Fabrication of Metal in Agriculture and Agri-business Applications, Winter Quarter, 1982, at The Ohio State University.

Treatments

Subjects were randomly assigned by class and by rotational group to levels of the treatment: X_1, divided attention between visual and auditory inputs; X_2, undivided attention between visual and auditory inputs. Divided attention was provided by giving verbal instruction while the student was perceiving, processing, and responding to visual inputs during the welding performance. The undivided attention condition was provided by stopping the welding performance, thus eliminating visual inputs, then providing verbal instruction; the students beginning to weld after the verbal instruction had been completed. Instructor talk during treatments was limited to those comments directly related to the arc welding task: shorten or lengthen arc, increase or decrease travel speed, increase or decrease lead angle. Audio tapes of instructor talk were made systematically throughout the administration of treatments and were used for verification of administration of the levels of treatment by a panel of reviewers.

Class sections met twice each week for two hour laboratory periods. Each class was subdivided into three groups and rotated through oxy-acetylene welding, hot and cold metal working, and arc welding instruction; each instructional area lasting three weeks. During the arc welding component of the rotation, the levels of the treatment were administrated. Subjects received approximately five minutes of treatment per one-half hour of practice welding which was an amount similar to that provided during real instructional situations.

Electrodes chosen for the welding task required by the investigation were E-6011, one-eighth inch AC electrodes. Subjects were also provided with eight pieces of one-fourth inch steel plate, six by one and one-half inches in size. Six pieces were for practice and two pieces for the final welds collected for analysis. Additional metal plates were provided for practice. All subjects were required to use alternating current (AC) with the amperage pre-set at 105 amps.

Outcome Measures

Subjects were required to submit for analysis one, six inch butt weld. Performance was based on efficiency (time), quality (weld quality), and an efficiency/quality ratio. Efficiency was measured by subtracting starting times per subject per weld from the successful completion times per subject per weld; successful completion was determined subjectively by visual inspection of the weldments by the researcher. As an additional check of efficiency, the number of electrodes used by each subject was monitored as a measure of actual welding practice.

Weld quality scores for the square butt weld were determined by quantitatively measuring tensile strength. Prior to measurement and analysis, each six inch weld specimen was mechanically cut two inches from each end. The center coupon, two inches by three inches, was used for the analysis of weld quality.

Upon completion of said measures, an efficiency/quality ratio was calculated by dividing time in minutes by the measure of weld quality.

Design

The inherent nature of the problem of interest, coupled with the limited availability of subjects for study, have directed the control of this investigation to focus upon producing internally valid results more than generalizations to some larger population. Thus, a clinical model rather than an indirect inference model was employed for the conduct of the investigation with future generalizability based upon replication (Feinstein, 1977). Subjects for study were obtained from available intact groups since random sampling procedures were not feasibly applied to the available populations. Manipulation, however, was possible through the random assignment of the level of treatment to groups. The design employed became truly experimental; a factorial extension of a posttest only control group design (Campbell and Stanley, 1963).

Data Analysis

Means and standard deviations of efficiency, quality, and efficiency/quality ratios were computed by class section and by rotational group. Although a 2 x 3 x 3 factorial design was employed, cell frequencies were too small to analyze data using a 2 x 3 x 3 factorial analysis of variance (ANOVA). A 2 x 3 factorial ANOVA was appropriate for the analysis of mean differences between levels of the treatment by class section based on efficiency, quality, and an efficiency/quality ratio.

A second 2 x 3 factorial ANOVA was calculated to analyze the effects of variable exposures to the divided attention condition of related instruction received prior to the administration of the treatments, i.e., level of treatments by rotational group based on an efficiency/quality ratio.

FINDINGS

Experimental Data: Hypothesis 1

The means and standard deviations of efficiency measures by condition of attention by class section are shown in Table 1. These data show that the means associated with the efficiency measures are numerically less (less time for task completion yields greater efficiency) for students in each class that received instruction under the undivided attention condition. Standard deviation scores are also of lesser magnitude. Data are analyzed using a 2 x 3 factorial ANOVA as summarized in Table 2.

Table 1

Means and Standard Deviations of Efficiency
By Condition of Attention by Class Section

	Class 1		Class 2		Class 3	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Divided Attention (X_1)	124.57	20.04	109.00	32.14	118.00	22.88
Undivided Attention (X_2)	114.25	14.39	99.57	23.79	100.75	21.48

Table 2

Analysis of Variance of Efficiency by Condition
of Attention by Class Section

Source	SS	df	MS	F
Attent	1684.91	1	1684.91	3.32*
Class	1755.78	2	877.89	1.68
Atten x Class	134.85	2	67.42	0.13
Residual	19822.38	38	521.64	
Total	23321.14	43		

* *p* .10

Observed effects of the treatment variable (condition of attention) are significant, *F* (1, 38) = 3.230, *p* .10. The class variable and attention x class interaction yield nonsignificant results.

As a check of efficiency measures, the number of electrodes used per subject was monitored as a measure of actual welding practice. Means, standard deviations, and the subsequent ANOVA yielded results not different from those previously presented.

Experimental Data: Hypothesis 2

The means and standard deviations of quality measures by treatment group by class section are presented in Table 3. Quality measures in pounds per square inch tensile strength appear higher for students instructed under the undivided attention condition. Subjecting resultant data to a 2 x 3 factorial ANOVA, summarized in Table 4, reveal nonsignificant differences among main effects for condition of attention: X_1, divided attention; X_2, undivided attention. The class variable and attention x class interaction again yield nonsignificant results.

Experimental Data: Hypothesis 3

Efficiency/quality ratios were calculated to further analyze the effects of conditions of attention on instruction of arc welding skills. Means presented in Table 5 and Table 7 must be interpreted as ratios; greater numerical values are less desirable than lesser numerical values. Efficiency/quality ratios are inversely related to performance.

Average efficiency/quality ratios and standard deviations by treatment group by class section are contained in Table 5. An examination of data included in Table 5 shows better mean efficiency/quality ratios for students instructed under the undivided attention condition.

Table 3

Means and Standard Deviations of Quality By Condition of Attention by Class Section

	Class 1		Class 2		Class 3	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Divided Attention (X_1)	42857.14	10894.47	41657.14	13549.77	39085.71	13461.48
Undivided Attention (X_2)	50500.00	11718.12	42971.43	8563.04	43900.00	12058.43

Table 4

Analysis of Variance of Quality by Condition of Attention by Class Section

Source	SS	df	MS	F
Atten	2.38×10^8	1	2.38×10^8	1.70
Class	2.41×10^8	2	1.20×10^8	0.98
Atten x Class	7.25×10^7	2	3.62×10^7	0.26
Residual	5.32×10^9	38	1.40×10^8	
Total	5.88×10^9	43	1.37×10^8	

Analysis of efficiency/quality ratios by treatment group by class section is presented in Table 6. Significance is observed for main effects of treatment, F (1, 38) = 4.156, $p < .10$. All other comparisons are non-significant.

Experimental Data: Hypothesis 4

The effects of the variable pre-exposures to the traditional divided attention condition of related instruction was investigated through the analysis of conditions of attention by rotational group; efficiency/quality ratios serving as the response measure.

Table 5

Means and Standard Deviations of Efficiency/Quality Ratios by Condition of Attention by Class Section

	Class 1		Class 2		Class 3	
	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD
Divided Attention (X_1)	3.28	1.80	2.87	1.27	3.53	1.89
Undivided Attention (X_2)	2.37	0.62	2.44	0.86	2.49	0.95

Table 6

Analysis of Variance of Efficiency/Quality Ratios by Condition of Attention by Class Section

Source	SS	df	MS	F
Atten	6.99	1	6.99	4.16*
Class	0.85	2	0.42	0.25
Atten x Class	0.74	2	0.37	0.22
Residual	63.97	38	1.68	
Total	72.43	43		

* p .10

Relevant means and standard deviations are presented in Table 7. Differences between the mean scores among treatment conditions show a progressive decline from rotational group 1 to rotational group 3. However, mean efficiency/quality ratios are consistantly better for the undivided attention groups.

Analysis of variance of efficiency/quality ratios by treatment group by rotational group is summarized in Table 8. Main effects for treatment and rotational group variables are significant, F (1, 38) = 4.233, and F (2,38) = 4.077, $p < .10$, respectively. Although these data suggest interactions, no significant interactions are observed.

Table 7

Means and Standard Deviations of Efficiency/Quality Ratios by Condition of Attention by Rotational Group

	Rotat 1		Rotat 2		Rotat 3	
	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD
Divided Attention (X_1)	4.21	1.79	2.37	0.60	2.64	1.48
Undivided Attention (X_2)	2.63	0.52	2.48	1.03	2.16	0.75

Table 8

Analysis of Variance of Efficiency/Quality Ratios by Condition of Attention by Rotational Group

Source	SS	df	MS	F
Atten	5.47	1	5.47	4.23*
Rotat	10.53	2	5.27	4.08*
Atten x Rotat	5.90	2	2.95	2.28
Residual	49.11	38	1.29	
Total	72.43	43	1.68	

* p .10

Conclusions

Hypothesis 1 was not supported.
Hypothesis 2 was supported.
Hypothesis 3 was not supported.
Hypothesis 4 was not supported.

The significant conclusions drawn from this study were:

1. Students who received arc welding instruction under the undivided attention condition performed more efficiently than students who received like instruction under the divided attention condition.

2. Weld quality was not significantly affected by conditions of attention when quality scores were observed independently from efficiency measures.

3. Efficiency/quality ratios for students instructed under the undivided attention condition were significantly better than efficiency/quality ratios of students instructed under the divided attention condition.

4. Students can learn to divide their attention when exposed to instruction under the divided attention condition for a prolonged period of time (6 weeks).

These conclusions were in agreement with those forwarded in the theoretically derived research hypothesis.

Implications for Instruction

This investigation was interested only in conditions of attention as they related to instruction, and the effects on student performance as a result of that instruction. The direct implication for instruction was: university arc welding instruction in programs of agricultural mechanization should be provided under the undivided attention condition. Visual inputs, the observation by the student of the actual welding performance; and auditory inputs, the verbal direction of the instructor; must be provided sequentially for optimum efficiency and efficiency/quality ratios.

What might this mean to the arc welding instructor? How might this knowledge be of benefit? Based on the findings of this investigation, instruction under the undivided attention condition was approximately 10.52% (as computed from efficiency averages) more efficient than instruction under the divided attention condition. Assuming fifty hours per quarter of arc welding laboratory instruction, approximately five hours or 1 week of lab time could be devoted to instruction of additional tasks with no decrement in performance in the tasks normally assigned. In addition, economic benefits may be realized; the result of fewer electrodes consumed, and less electricity used.

Extrapolating beyond the boundaries of this investigation, the stated implication may be applicable to the instruction of non-university students (high school or adult populations), in programs other than agricultural mechanization (agricultural education, vocational education, and non-vocational education), and in tracking tasks other than flat downhand position arc welding (oxy-acetylene welding, forging, sawing, painting, and placing mortar).

Recommendations

1. Replicate this study with diverse populations and varied tracking tasks to increase generalizability and subsequent instructional implications.

University students were the available subjects for the conduct of this investigation, therefore, the instructional implication could be directed to only like university students. By replicating this investigation with non-university populations such as high school vocational and non-vocational students and adult learners, the generalizability of the instructional implication could be greatly improved.

In addition, conducting this investigation where the tasks selected would be tracking tasks other than flat downhand position arc welding,

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the instructional implication could apply to tracking tasks in general rather than to its present task specific application.

2. Determine the longitudinal effects of instruction under divided and undivided conditions of attention (retention/decay) by conducting follow-up investigations with the same subjects.

Arc welding students instructed under the undivided condition of attention performed significantly better than the students instructed under the divided condition of attention. Will this difference be observable if the same subjects were again tested one year later?

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DISCUSSION OF RESEARCH REPORTS PRESENTED ON EDUCATION/WORK TRANSITIONS
NATIONAL AGRICULTURAL EDUCATION RESEARCH MEETING
ST. LOUIS, MISSOURI - DECEMBER 3, 1982

The role of discussant as I viewed it in preparing the comments related to these three research presentations was threefold: (1) To report the major strengths of the report; (2) To identify areas of concern that I perceived in the report; and (3) To give suggestions for improvement where appropriate. I would like to emphasize at the outset that all of my comments are intended constructively, and I hope that they are received that way by the presenters. I shall discuss the reports in the order that they were presented.

"Factors Relating to the Job Placement of Former Secondary and Postsecondary Vocational Education Students"

Strengths

I commend the researchers for selecting a topic that is highly significant to all vocational programs. In light of current budget cutbacks, job placement in relation to program accountability is likely to become more and more important in the future.

The introduction is succinct and leads very logically into the problem being investigated. The objectives of the study are appropriate and clearly stated.

The organizational framework of factors studied (education, labor market, and community) that was presented in the paper added much to the overall clarity of the report.

The researchers are to be commended for the breadth in scope of the study reported. A study limited to a few institutions in one state would certainly not have the impact of one involving up to 62 institutions in seven states.

Also, specific recommendations are presented and targeted to the relevant groups. These recommendations clearly derive from the information gathered in the study.

Areas of Concern

As I reviewed this research report, certain questions came to mind regarding some aspects of the paper. These questions included:

How was the needed sample size determined for each phase of the study? Was a formula utilized (i.e., Krejcie and Morgan), or was this the judgment of the researchers?

How were the individuals selected to participate in the study? The sampling procedures are clear to this point, but I am left uncertain as to how an individual was identified to receive a questionnaire or be interviewed.

What follow-up procedures were used as attempts to improve the response rate to the mailed questionnaire? A 25/24 percent response rate is quite low. Also, was the response rate similar among the various groups surveyed? I would suspect that vocational teachers would respond at a higher rate than parents or local employers.

How was the job placement division as high or low determined for the postsecondary institutions? Figures are presented for the secondary programs (54.3% and above was considered high) but not for postsecondary. I would be interested to see how these compare.

Finally, I feel that some tabular presentations of the major findings of the study in a separate section would have allowed a more in-depth examination of the findings of the study. In general, I would prefer to see the findings of the study followed by the researcher's conclusions. This way the reader can draw his own conclusions and determine if they are consistent with those arrived at by the researcher.

"Organizational Commitment of Cooperative Extension Service Agents"

Strengths

I again commend the researchers on their selection of a relevant and potentially fruitful topic in the area of professional agricultural occupations. The information presented provides some valuable insights into the area of organizational commitment of extension agents and may have implications for reducing both turnover and absenteeism.

The problem investigated is well developed and the objectives of the study are clearly stated.

The procedures used in the study are clearly and succinctly presented, and the scales included in the questionnaire are well documented. A copy of the questionnaire would have been desirable, but I realize that inclusion of the instrument was outside of the constraints of this paper.

The researchers clearly attempted to use scales with established validity and then measured the reliability of these scales within the context of this study. I compliment them for these actions since much effort is often wasted developing scales and instruments when equally appropriate scales and instruments already exist.

Areas of Concern

Some concerns which were identified as I reviewed the paper include the following:

Objective 1 does not seem to be directly addressed in the research report. One can gain a general idea of the level of commitment of extension agents by examining Figure 1, but these findings are not clearly communicated in the report.

Some references cited in the textual presentation do not appear in the references. Specifically, these include Sheldon (1971), Hrebiniak and Alutto (1972), and Porter and Steers (1973).

When comparing the agents by program area, I would have been interested to know what statistics were used and the resulting level of statistical significance. Also, an additional analysis comparing 4-H agents with others when the variable tenure was statistically controlled could have clarified the hypothetical statement made by the researchers that "The low commitment among 4-H agents could be due to the fact that they had shorter tenure than agriculture or home economics agents."

Finally, throughout the discussion section of the paper, various implications for practice were presented, and accurately so. However, I feel that a section summarizing these implications for practice would have enhanced the overall effectiveness of this paper.

"Assessing Trends in Educational and Occupational Aspirations of Students in Agriculture Majors"

Strengths

Educational and behavioral science research has been criticized for a lack of efforts to build on previous research and articulate research efforts. I would like to compliment the researchers for their attempts to make this study an outgrowth of previously conducted research.

The problem is well developed through the introduction and leads logically to the objectives of the study.

The methodology of the study is clearly presented, and I would especially commend the researchers for the follow-up procedures utilized. Not only were non-respondents followed up, but efforts were made to assess the differences that might exist between respondents and non-respondents.

In general the paper is well organized and written with appropriate data presentation and analysis.

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Areas of Concern

A few concerns did develop during the review of this research report.

What percent of the population did the 1982 sample comprise, and on what variable was this group stratified? Without being explicitly stated, I would infer that major department was the variable of stratification.

The textual presentation regarding work experience of students does not completely agree with data shown in Table 8. A factor seems to have been omitted from the table.

I feel that a more thorough discussion is warranted for Table 13. I commend the researchers for the use of advanced statistical techniques, but I also feel that a more detailed interpretation should accompany these techniques.

Finally, I feel that a section summarizing implications for practice would have enhanced the overall effectiveness of this research report.

THE NATIONAL CENTER
FOR RESEARCH IN VOCATIONAL EDUCATION

FACTORS RELATING TO THE JOB PLACEMENT OF FORMER SECONDARY AND POSTSECONDARY VOCATIONAL EDUCATION STUDENTS*

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INTRODUCTION

A major criterion for evaluating vocational education programs has been the number of former students placed in jobs related to the training they received. In recent years the placing of students in jobs related to their training has assumed even greater importance in vocational education. In 1976, P.L. 94-482, popularly known as the Education Amendments of 1976, was enacted. A portion of this legislation mandated that each state systematically evaluate its vocational education programs and identified the primary evaluative criterion as the extent to which completers and leavers find employment in occupations related to training. Also in the 1970s a school-based job placement movement developed. While this movement has a lengthy history, its ultimate goal has been to make school-based job placement services available to all secondary and postsecondary students. In addition, there has been a chronic unemployment problem in the United States. The problem is especially acute among female, minority, and lower socioeconomic class youth. Together, these three events (among others) have focused the attention of education, business/industry, and government on the job placement of students trained in publicly supported institutions.

Traditionally, federal, state, and local education agencies have collected information through follow-up studies intended in part to identify the extent to which vocational education program completers find employment in occupations related to their training. One major problem with the information obtained through follow-up studies is that it does not adequately address the question of what factors and processes have an important influence on the job placement of former secondary and postsecondary vocational education students. Without information on the factors influencing the job placement process, vocational educators face difficulties in making recommendations to enhance the placement of students in jobs related to their training. If policymakers and decision makers are to optimize the use of resources, it is essential that they have information concerning those factors affecting the placement of former students in jobs for which they were trained. This publication summarizes information from studies** of factors affecting job placement conducted at the National Center for Research in Vocational Education.

OBJECTIVES

The overall goal of this study was to produce knowledge for use in determining policy and making decisions to improve the job placement rates of vocational education programs. The objectives of the study were:

1. to identify factors relating positively or negatively to the placement of former secondary vocational technical education students in jobs related to their training;

2. to provide a detailed description of the educational and community processes that appear to influence former vocational education students being placed in jobs related to their training;

3. to generate hypotheses concerning variables relating to the placement of vocational education students in jobs related to their training.

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*Paper prepared for presentation at the National Agricultural Education Research Meeting, St. Louis, 1982.

**For a more detailed report the reader is referred to McKinney, Floyd L., et al. Factors Relating to the Job Placement of Former Secondary Vocational Education Students. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1981, ED 208477. A related study is also available: McKinney, Floyd L., et al. Factors Relating to the Job Placement of Former Postsecondary Vocational-Technical Education Students. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1982, CE031904.

Dependent Variable

The dependent variable for the study was the percentage of former vocational education students available for placement who were employed in a field related to their training.

Study Framework

In this study, the job placement rate provided by state and local education agencies was viewed as a measure of the ability of a vocational education program within an institution to effectively attain the goal of placing students in jobs related to their training upon their leaving the vocational education program. This view of job placement focused the initial generation of issue areas and of research questions on vocational education processes and school activities that are intended to achieve the outcome of job placement for students leaving the program. Priority was given to those processes and activities that appeared to be links in explaining why vocational education, as a distinctive treatment, influences job placement rates. In addition, the educational activities are more important to policymakers and decision makers because they tend to be processes or activities that can be manipulated.

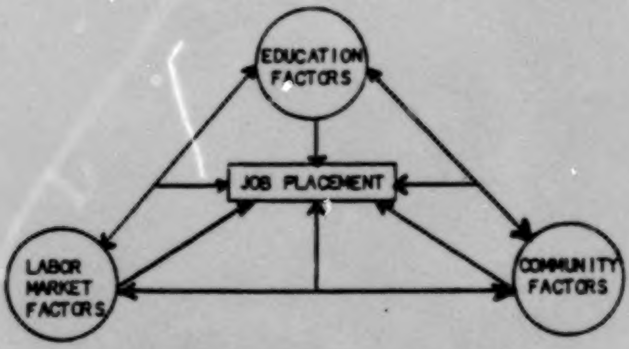
This conceptualization, in and of itself, did not provide clear direction as to what processes or activities are needed, required, or desirable to achieve high job placement rates. The conceptualization did suggest, however, that different compositions of processes and activities in different contexts will result in variations in the outcome of training-related job placement.

Although emphasis in this conceptualiztion focused on education factors, it was realized that other types of factors influence youth and adult employment, e.g., labor market demand, minimum wage laws, etc. Therefore, two other types of factors, labor market factors, and community factors, were included.

The study was organized around the framework displayed in figure I. The major components of the framework were used as a starting point for identifying and organizing possibly significant factors influencing job placement. The framework suggests that in the transition from school to work three broad categories of factors have an impact on the obtainment of jobs by former students. These interacting categories are labeled education factors, labor market factors, and community factors.

FIGURE 1

HEURISTIC FRAMEWORK
FOR FACTORS INFLUENCING JOB PLACEMENT



METHODS AND PROCEDURES

The methods and procedures used in studying secondary and postsecondary programs were somewhat different. The following sections present an overview of these.

A variety of research approaches were used to conduct the studies. These included: a literature review, case studies, mail questionnaires, and an analysis of existing data. These study approaches were deliberately chosen in order to view the problem from different perspectives.

A nonprobability sampling design was used. The major disadvantage of this design is that no valid estimate of the risk of error can be obtained (Blalock, 1979). However, because these were exploratory studies in which the main goal was to obtain valuable insights that ultimately may lead to testable hypotheses, the nonprobability sampling design was deemed appropriate (Blalock, 1979; Kish, 1965; and Ackoff, 1962).

Secondary

The first sampling stage involved the initial selection of states to participate in the study. Judgment sampling was used to select seven states. The criteria used in making the judgement samples were:

a. the presence of an operating management information system in the state;

b. the willingness of states to participate in the study;

c. a geographic distribution of states roughly approximating the major geographical regions of the United States; and

d. consideration of project constraints such as level of funds, staff, and time.

The second sampling stage involved the selection of local education agencies (LEAs). LEAs offering vocational education programs in at least five different occupational fields were selected to participate. Out of a total of 1,476 LEAs in the seven states, 586 met this criterion. The 586 education agencies were then stratified on the basis of three major variables each having two levels: (1) average job placement rate of the LEA (54.3 percent and above were considered high and below 54.3 percent were considered low as established by a median split for the 586 job placement rates); (2) labor market demand (High labor market demand was defined as having unemployment rates of 5.9 percent and below. Low labor market demand was defined as having unemployment rates of 6.0 percent and above); (3) community type (Metropolitan communities were defined as located in a Standard Metropolitan Statistical Area [SMSA] and nonmetropolitan as not located in an SMSA).

In the third stage of sampling, seventy-two LEAs were randomly selected to serve as questionnaire sites to receive the mail questionnaires.

The fourth sampling stage consisted of selecting the individuals to receive the mail questionnaires. Based upon the review of literature and meetings with external project consultants, ten groups of respondents were identified: local vocational education directors, principals of secondary schools, vocational education teachers, guidance counselors, job placement specialists, local advisory committee members, local employers, current vocational education students, former vocational education students, and parents. Questionnaires were mailed to a total of 20,307 individuals at the sixty-two participating sites. The return rate was 25 percent.

Postsecondary

A judgement sampling technique was also used in selecting the eight case study sites. An equal split of high and low placement sites were selected. Four vocational schools and four comprehensive high schools were included in the study. All individuals contacted were promised confidentiality regarding the identification of the names of participating states, local education agencies, and responding individuals in all sites. At the case study sites a total of 438 individuals were interviewed.

The first sampling stage involved the initial selection of states to participate in the study. Judgment sampling was used to select four states to be included in the study. The criteria used were:

a. the presence of an operating management information system in the state;

b. the willingness of states to participate in the study;

c. a geographic distribution of states; and

d. a strong statewide commitment for providing postsecondary vocational-technical education programs.

The second sampling stage involved the selection of postsecondary institutions. The population from which institutions were selected to participate was composed of postsecondary institutions offering vocational-technical education programs in at least five different occupational fields as defined by the six-digit USDE code number. The institutions in each of the four states were then stratified on the basis of two major variables: (1) high or low job placement rate (sites were identified as high or low based on a median split of job placement rates for postsecondary institutions in a state) and (2) high or low labor market demand.

(High labor market demand was defined as having unempoyment rates of 5.9 percent and below. Low labor market demand was defined as having unemployment rates of 6.0 percent and above.)

In the third stage of sampling, thirty-two postsecondary institutions were randomly selected to serve as sites to receive the mail questionnaires. One of the mail questionnaire sites withdrew from the study at a time when it was too late to select another site.

The fourth sampling stage consisted of selecting the individuals to receive the mail questionnaires. Based upon the review of literature and meetings with external project consultants, eight groups of respondents were identified: vocational-technical education deans/directors, vocational-technical education teachers, vocational-technical education guidance counselors, job placement specialists, advisory committee members, employers, current vocational-technical education students, and former vocational-technical education students. Questionnaires were mailed to 10,983 individuals with a 24 percent return.

A judgement sampling technique was also used in selecting the case study sites. Two of the postsecondary institutions selected were very large and complex institutions. One of the postsecondary sites was in a small rural setting and another was located in the inner city. Three of the institutions were community colleges and one was a postsecondary technical school. All individuals contacted were promised confidentiality regarding the identification of the names of participating states, local education agencies, and responding individuals in all sites. At the case study sites a total of 261 individuals were interviewed.

CONCLUSIONS

The conclusions presented are those that appear to have the greatest relevance for policymaking, decision making, and future research regarding the job placement of former secondary and postsecondary vocational education students. The study conclusions should be viewed as working hypotheses for additional testing in the ever-changing context in which vocational education programs operate.

The study conclusions are presented by using the broad categories of factors suggested in the framework for the study. Most attention is given to education factors because vocational educators have a greater likelihood of bringing about change in this area as compared to factors dealing with the labor market or community.

Secondary

Education Factors

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE ADMINISTRATORS, COUNSELORS, AND TEACHERS DEVELOPED A CLEAR UNDERSTANDING THAT THE PRIMARY PURPOSE OF THE VOCATIONAL EDUCATION PROGRAMS IN THEIR SCHOOL SYSTEM WAS THE PLACEMENT OF FORMER STUDENTS IN JOBS RELATED TO THEIR TRAINING

> In the case studies, there was an apparent difference between key interviewees at high and low placement sites concerning the relative importance of job placement as one of the goals for vocational education programs. More administrators and vocational education teachers appeared to support job placement not only as a goal but also in practice at high placement sites. Superintendents and principals at high placement sites appeared to have greater commitment to vocational education and to job placement as one goal of vocational education. The findings from the case studies indicated that positive philosophical positions toward vocational education programs tended to enhance support for placement as one of the goals of vocational education.
>
> Evidence from the correlational analyses of data from the mail questionnaires suggested that the attitudes of vocational education directors were related to job placement. The ranking assigned by directors to the goal of placement in a training related job (r=.36), the creation of an awareness of different occupations (r=.27), and placement in a job not necessarily related to training (r=.26), were positively related to placement rates. Those results suggest that the goals a director holds for a program influence job placement rates. In the analysis of existing data the rating for the goal of placement in a training related job, helpfulness of teachers, and job placement service emerged as important factors in the multiple regression and discriminant analyses. These results support those of the case studies in which the importance of philosophy, the role of the teacher, and placement services provided for securing a job were deemed important.

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE ADMINISTRATORS, COUNSELORS, AND TEACHERS IN A SCHOOL SYSTEM ARE CONSISTENT WITH EACH OTHER CONCERNING THEIR BELIEF THAT THE PRIMARY PURPOSE OF VOCATIONAL EDUCATION IS THE PLACEMENT OF STUDENTS IN JOBS RELATED TO THEIR TRAINING

At high placement sites, key administrators and vocational education teachers appeared to have a more positive regard for vocational education and subsequent job placement. This finding supports the work of Altman and Morrison (1966) and Meehan and Franchak (1975) who found that when school personnel are involved in the placement process, placement programs tend to be more effective. Gross and Herriot (1965) suggested that when administrators lend their active support and interest to a policy, staff members tend to work harder to achieve that policy's objectives. Social, Education Research and Development, Inc. (1968) found that "good teacher-principal relations, with emphasis on the supportive role of supervision," was one element which helped to produce an effective vocational education program.

At the high placement sites, more principals and vocational education teachers believed that teachers should have very much responsibility for job placement. Several teachers at high placement sites indicated that they received support from the school administration and the community for their role in job placement. The responsibility for job placement at high placement sites was spread among more school personnel.

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE PRINCIPALS ARE COMMITTED TO THE PLACEMENT OF FORMER VOCATIONAL EDUCATION STUDENTS IN JOBS RELATED TO THEIR TRAINING PROGRAM

Several writers have stressed the importance of the administrator's role in the success of vocational education programs. Kaufman et al. (1967) found that principals who are out of touch with the vocational education program can contribute to low placement rates for students.

From the case studies it appeared that positive attitudes of administrators, especially superintendents and principals, were essential at the school level for providing philosophical and financial support to vocational education and job placement. Vocational education directors spent more time on job placement activities at high placement sites than did their couterparts at low placement sites

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE THERE IS A HIGH LEVEL OF STAFF ENTHUSIASM FOR JOB PLACEMENT

At the high placement case study sites, regardless of the presence of a placement office, more resources such as teachers' time and opportunity to contact employers, the posting of job opportunities, and the collection of information regarding occupations in the local area were provided to students.

At the high placement sites, school staff members were more involved and more enthusiastic about their participation in job placement efforts. It also appeared that more emphasis was placed on job placement by all members of the staff at high placement sites.

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE TEACHERS ARE COMMITTED TO THE POSITION THAT THEY HAVE A GREAT AMOUNT OF RESPONSIBILITY FOR PLACING STUDENTS IN JOBS RELATED TO THEIR TRAINING

The consensus among interviewees was, as a school administrator stated, "teachers are the key to placement." Interviewees credited teachers, more than any other school personnel, with placing former students in jobs related to their training. Most teachers, especially at high placement sites, appeared to believe, as one teacher stated "placement is my responsibility." At high placement sites, vocational teachers appeared to be more actively involved in job placement and appeared to have a greater sense of identification with their role in the placement process.

Teachers described their job placement responsibility as including the teaching of job-seeking skills, maintaining communication with employers in the community, and recommending students to employers. Information from the mail questionnaires indicated that more teachers at high placement sites than at low placement sites spent some amount of time each week conducting job placement activities.

Case study interviewees frequently noted that personal contact made by teachers with businesses increased the opportunities for job placement. As one state director of vocational education said, "contacts between teachers and businesses serve to establish a sense of mutual faith and trust between the employer and the school."

In response to the mail questionnaires, 59 percent of the vocational education teachers from high placement sites indicated that they contacted businesses regarding job placement of students. More teachers at high placement sites (34 percent) indicated a greater frequency (at least twice a year) of contact with employers regarding placement of students than did the teachers at low placement sites.

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE THE JOB PLACEMENT OFFICE PROVIDES COORDINATION AND INCLUDES TEACHERS IN JOB PLACEMENT ACTIVITIES

Teachers at both high and low placement sites believed placement would be increased if their school had a placement office which would serve as a central clearinghouse to gather and disseminate information and provide clerical assistance. The study findings suggested that the responsibility for placement was spread among more school personnel at high placement sites. Involvement by school personnel in the placement process increased their opportunities to exchange information and ideas and to discuss problems regarding students and the vocational education program. This plays an important role in the effective matching of students and jobs, particularly since the placement service personnel may have less frequent and less intense contact with the students than do other school personnel, specifically the vocational teacher and the guidance counselor.

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE STUDENT ADMISSION TO VOCATIONAL EDUCATION PROGRAMS IS RESTRICTED TO STUDENTS WITH HIGH INTEREST AND HIGH POTENTIAL

At a high placement site a counselor explained that

> all ninth grade students are given the GATB, and I discuss students aptitudes with them to decide what kind of training to go into. Students at this vocational school are accepted for programs on the basis of their records. The better students are the one that get to enroll in vocational programs.

At another site an administrator stated that "fundamentally if we have good placement into the program, we have good placement out of the program." A counselor provided an example of how a rigorous selection process enhances placement. The counselor said, "welding has the highest placement because we can pick the best of the many students who want to be in the program." Counselors were regarded as having a major role in admission of students to the vocational education programs.

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE COOPERATIVE VOCATIONAL EDUCATION PROGRAMS PLACE STUDENTS IN JOBS RELATED TO THEIR TRAINING PROGRAMS

The majority of case study interviewees were positive regarding the effectiveness of cooperative work programs and felt that they had a positive effect upon job placement. Most parents, teachers, current students, former students, employers, and administrators were also supportive of the cooperative education program at their sites. As one parent explained, "the work experience gained by my son in the cooperative program will enhance his job placement opportunities." The majority of the parents indicated that their children learned a lot about the adult working world in the cooperative education program.

Employers frequently discussed the benefit that participation in cooperative education offered their businesses. One employer said that, "kids work hard and learn a lot" and do a good job for him. Another mentioned that cooperative work placement provides him with an opportunity to "size-up" prospective employees before hiring individuals for full-time employment.

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE FREQUENT USE IS MADE OF NEEDS ASSESSMENT SURVEYS FOR PLANNING AND EVALUATING VOCATIONAL EDUCATION PROGRAMS

At the high placement case study sites, community needs assessment surveys were used more frequently than at the low placement case study sites.

Approximately one-half of the employers who responded to the mail questionnaires indicated that they were contacted by the school personnel regarding skill competencies needed by their industries. The most frequent sources of information for program planning were needs assessments, state level planning data, teacher input and student interest. According to the individuals responding to the mail questionnaires, needs assessments were frequently used for revision of curriculum, with the predominant input for revision coming from advisory committee members.

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE THE VOCATIONAL EDUCATION CURRICULUM IS ORIENTED TO THE NEEDS OF EMPLOYERS

A theme which emerged from the literature review was the need for vocational educators to work closely with employers and other community representatives in the planning of vocational education programs.

The vocational education curriculum was reviewed and updated more frequently at high placement case study sites than at low placement case study sites. Advisory committee members at high placement sites reported that they assisted vocational education staff in identifying job tasks and skills performed by workers. It appeared that when advisory committee members were knowledgeable about the types of skills required by entry level employment and when their knowledge was actively sought by school administrators, placement rates were influenced positively. A high placement site director of vocational education stated that, "teachers are responsible for keeping abreast of changes in industry work requirements. They adjust their curricula accordingly."

When responding to the mail questionnaires vocational education directors indicated that more advisory committee members determine skills to be taught at high placement sites than at low placement sites.

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE THE SCHOOL STAFF RESEMBLES THE RACIAL BALANCE OF THE COMMUNITY SERVED

From the response to the mail questionnaires it was apparent that more school personnel were minorities at high placement sites. The ethnic makeup of the eight case site communities indicated a trend toward a greater percentage of minorities at high placement sites.

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE STUDENTS PARTICIPATE IN YOUTH ORGANIZATIONS

According to several authors (Bottoms 1980 and Reel 1980) participation in youth organizations provides an integral and highly beneficial component of the vocational education process. Former students responding to the mail questionnaires from the high placement sites reported more participation in youth organizations. Almost a third (28 percent) of students at high placement sites belonged to VICA. Membership in FFA and FHA/HERO was also greater at high placement sites (14 percent). The frequency of participation in youth organizations was also greater at high placement sites. The percentage enrolled in youth organizations had moderately large correlations (.38) with placement rates for all service areas, indicating that as the percentage of members in youth organizations increased, the placement rate increased.

Former students frequently attributed their employment achievements to the training that they had received as participating youth organization members. This training included participation in public speaking, parliamentary procedure activities, and employability skill contests.

Labor Market Factors

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE THERE IS A HIGH DEMAND FOR WORKERS IN SURROUNDING LABOR MARKET AREAS

Labor market conditions over which vocational educators have no control are at least as important as the nature of vocational education itself in determining job placement. The percentage of unemployment in communities with low placement was significantly higher than in communities with high job placement. There was a significant correlation (-.59) between the labor market unemployment rate and related job placement on the analysis of existing data at the sixty-two study sites.

Labor market demand also emerged as an important factor in job placement in the analysis of the responses to the mail questionnaire. This was congruent with the assertions of the case study interviewees, that job placement rates and labor market demands are highly correlated. "The more jobs there are in the community, the more placement there is from the schools," was frequently expressed by interviewees at the case study sites. Most interviewees at the case study sites emphatically pointed out that the major deterrent to high job placement was the lack of entry-level jobs in the local community. One interviewee's remark summarized what others also said, that "there must be jobs if there is to be higher placement!" Additional evidence to support this finding was Eninger's (1968) Project Metro study showing that the most common reason for former students obtaining jobs unrelated to their training was the former students' inability to find a related job.

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE TRANSPORTATION TO JOBS IS AVAILABLE

Lack of transportation emerged as a significant barrier to employment during the statistical analyses of the responses to the mail questionnaires. All the respondent groups were asked to rate the amount of difficulty that lack of transportation posed to vocational education graduates who were trying to obtain jobs. The ratings for teachers (r = -.25), principals (r = -.25), counselors (r = -.36), and current students (r = -.36) were found to be related to job placement rates. In the multiple regression analyses, the difficulty posed by transportation emerged as an important factor in placement among former and current vocational education students. Also, this question was found to be a significant variable in the discriminant function analyses for the respondent groups of employers, advisory council members, administrators (principals and directors), current students, former students, and faculty (vocational education teachers, counselors, and job placement specialists). Together, these results suggested that at sites where transportation is rated as posing relatively more difficulty in job placement, placement rates were lower. Thus, if the ratings have validity, adequate transportation is necessary for optimizing job placement rates. These results are supported by a study by Borus, et al. (1980). In the National Longitudinal Survey (NLS) of a representative sample of 12,693 youth, age fourteen to twenty-one, the lack of adequate transportation and the mismatch in the location of jobs and workers were found to be major barriers. Moreover, the NLS results show that lack of transportation is cited as an impediment to getting a good job by 30 percent of youth, including 43 percent of black males.

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE THERE IS A MIX OF INDUSTRY SIZES WITH PROPORTIONALLY LESS LARGER INDUSTRY IN THE AREA SERVED BY THE SCHOOL

Analysis of the existing data indicated that the job placement rates were positively correlated with sites having proportionally smaller industries. Large industries were defined as having more than 250 employees. This finding was further corroborated by the respondents at the sixty-two mail questionnaire sites. There was a significant positive correlation (r=0.35) between proportionally fewer large industries and high job placement sites.

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE MANUFACTURING IS A MAJOR INDUSTRY IN THE COMMUNITY IN WHICH THE SCHOOL IS LOCATED

From existing data which was used to provide descriptive information about selected socioeconomic variables at the case field sites, manufacturing was found to be the major industry in the high placement communities.

Community Factors

HIGHER JOB PLACEMENT EXISTS IN THOSE SECONDARY SCHOOLS WHERE THE SCHOOL IS LOCATED IN A COMMUNITY WITH PROPORTIONALLY MORE NONWHITES IN THE POPULATION

The ethnic makeup of the eight case study site communities indicated a trend towards a greater percentage of minorities at the high placement sites. The analysis of existing data further indicated a trend towards a positive relationship between the percent of related placement and communities with more nonwhites in the population.

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It appeared that student placement in related jobs is higher in communities with greater percentages of minorities comprising the population.

Postsecondary

Education Factors

HIGHER JOB PLACEMENT EXISTS IN THOSE POSTSECONDARY INSTITUTIONS WHERE PERSONNEL ARE COMMITTED TO THE PLACEMENT OF STUDENTS IN A JOB RELATED TO TRAINING AS THE MAJOR GOAL FOR THE VOCATIONAL-TECHNICAL EDUCATION PROGRAM

At the highest placement case study site, job placement appeared to be the highest priority goal of the individuals interviewed. The majority of those interviewed agreed that the ultimate goal of the area postsecondary institution was to place students in jobs related to their training. The instructors also recognized that job placement was one of their responsibilities.

The respondents to the mail questionnaires indicated their second priority for vocational-technical education was to place students, as they leave school, in jobs related to their training. The top goal was to provide students with the competencies needed to obtain a job.

Sites with a higher job placement rate appeared more likely to have respondents to the mail questionnaire who gave a higher ranking to the goal of placement in a related job.

Findings from the case study and the mail questionnaires revealed that positive philosophical positions regarding job placement are critical for high placement. At the postsecondary institutions with relatively high job placement rates the commitment of administrators, faculty, and other staff to job placement as one important goal of their vocational-technical program was evident. The commitment was also apparent in the level of resources allocated to promote job placement activities at the institution. At the highest placement sites teachers' promotions were affected by their record of job placement.

The results of the correlational analysis of 163 variables with job placement in a related field, using all respondent groups, or those who were asked a common core of questions, revealed that where the respondents believed that a primary goal of vocational education is training for a job or more specifically for a job in a related field there was a positive relationship ($r=.55$) with percentage of job placement in related field.

HIGHER JOB PLACEMENT EXISTS IN THOSE POSTSECONDARY INSTITUTIONS WHERE PERSONNEL ARE ENTHUSIASTIC ABOUT THE PLACEMENT OF STUDENTS IN A JOB RELATED TO THEIR TRAINING AS THE MAJOR GOAL FOR THE VOCATIONAL-TECHNICAL EDUCATION PROGRAM

At the postsecondary institutions with relatively high job placement rates the commitment of administrators, faculty, and other staff to job placement as one important goal of their vocational-technical education program was evident. Throughout the study it was evident that the most significant factor in the level of job placement at postsecondary institutions was the underlying philosophical position of administrators and the individual faculty members who did much of the actual job placement and the other staff members who provided essential support and information services.

Instructors at the case study site with the highest job placement rate stated, that they actively pursued job placement for their students. Several instructors reported that they carefully screen students they refer to employers, so that "square pegs are not placed in round holes." The findings from the case studies indicated that the level of job placement strongly related with instructors belief that it was their responsibility to place students in jobs related to their training.

HIGHER JOB PLACEMENT EXISTS IN THOSE POSTSECONDARY INSTITUTIONS WHERE ADMINISTRATORS ARE COMMITTED TO AND ENCOURAGE ESSENTIAL INTERACTIONS THAT PROMOTE OPEN COMMUNICATION AMONG REPRESENTATIVES OF COMMUNITY ORGANIZATIONS, LABOR, BUSINESS, INDUSTRY, AND POSTSECONDARY INSTITUTION PERSONNEL

In a landmark study, Burt (1967) stated, "It is the quality of school leadership which is decisive in determining the nature and extent of industry cooperation." A good relationship between the vocational-technical institution and business and industry existed at the highest job placement case study site. The mission statement of the postsecondary institution may have had some impact on the good relationship. The mission statement in the faculty handbook stated:

> "It is the intent that the vocational-technical program shall concern itself with the welfare and interest of the people of the area and shall maintain close ties with those segments of activity contributing to an increase in the quality of life and economic development of the area."

HIGHER JOB PLACEMENT EXISTS IN THOSE POSTSECONDARY INSTITUTIONS WHERE INSTRUCTORS MAINTAIN FREQUENT AND MEANINGFUL CONTACTS WITH THE BUSINESS AND INDUSTRIAL COMMUNITY

Several writers indicate that one of the most effective formal means of obtaining the necessary cooperation between industry and education has been through the advisory committee. Studies conducted throughout the past three decades show that vocational-technical instructors have provided more realistic education when assisted by advisory groups.

Responses to the mail questionnaires indicated that placement of students in jobs related to their training seemed to be enhanced when postsecondary institution personnel maintained consistent contact with business and industry personnel. At high placement sites instructors maintained ongoing communication with employers and job placement specialists and administrators.

HIGHER JOB PLACEMENT EXISTS IN THOSE POSTSECONDARY INSTITUTIONS WHERE THE VOCATIONAL-TECHNICAL EDUCATION CURRICULUM IS RELEVANT AND RESPONSIVE TO THE NEEDS OF EMPLOYERS

Rall and O'Brian (1977) found that collection of data about students and the local labor market has become essential for comprehensive program planning and for meeting the requirements of the law. When a new curriculum is being considered it is necessary to consult with representative employers of persons in order to be reasonably certain that jobs will become available. Reviews of national, regional, and state manpower projects may indicate broad trends but more exact, local data are needed. At sites where advisory committee input and other labor market information was used as a basis for curriculum change the placement rates were higher.

HIGHER JOB PLACEMENT EXISTS IN THOSE POSTSECONDARY INSTITUTIONS WHERE JOB PLACEMENT SPECIALISTS AND COUNSELORS SERVE AS THE INITIAL SOURCE OF INFORMATION ABOUT JOB OPENINGS FOR INSTRUCTORS AND STUDENTS, PROVIDE A CLEARINGHOUSE FUNCTION AND A SUPPORT FUNCTION (SECRETARIAL ASSISTANCE, TELEPHONE, JOB LISTING) FOR INFORMATION ABOUT JOBS

An important finding from the study regarding the job placement process was that a well-organized effort often coordinated by a job placement specialist, who had the cooperation of faculty and administration, was necessary for high job placement. At the highest job placement case study site the job service counselor viewed the role as providing the greatest number of job options to the greatest number of students. The counselor's duties included: (1) receiving job openings from employers who contact the school or from the state employment service (SES) job bank, (2) informing instructors and students of the openings, (3) matching students to jobs and arranging job interviews, (4) conducting small group workshops on job seeking skills with students, (5) conducting public relations activities with employers concerning the school, and (6) posting part-time job openings for students who desire part-time work while attending school. In addition, the counselor provides labor market information to the staff.

HIGHER JOB PLACEMENT EXISTS IN THOSE POSTSECONDARY INSTITUTIONS WHERE ADVISORY COMMITTEE INPUT IS USED IN PLANNING VOCATIONAL-TECHNICAL EDUCATION PROGRAMS

The Educational Amendments of 1976 (P.L. 94-482) required consultation with a local advisory committee when planning programs for vocational education. Administrators and instructors at high placement sites made more frequent use of advisory committees in program planning. At the highest job placement case study site it was apparent that the advisory committee was directly involved in the planning of all vocational-technical education programs. Without the recommendation of the advisory committee, no new programs, or changes within an existing program were considered.

The quality of the involvement of advisory committees emerged as a critical factor in the case study findings. Where institutions had a high job placement rate the advisory committee meetings were focused more specifically on substantive issues concerned with program planning. At high placement sites meetings with advisory committee members were productive with members input recorded and incorporated by school staff in planning and decision making.

HIGHER JOB PLACEMENT EXISTS IN THOSE POSTSECONDARY INSTITUTIONS WHERE PLANNING IS COORDINATED WITH COMMUNITY AND STATE ECONOMIC DEVELOPMENT ACTIVITIES ESPECIALLY THOSE ACTIVITIES RELATED TO LABOR SUPPLY AND DEMAND

It appeared that program planning at high placement sites was focused more clearly upon the needs of employers and the emerging trends on the labor market. Postsecondary institutions with high job placement rates work closely with business and industry leaders. It was apparent that the postsecondary institution staff in high placement sites more clearly understood the role of the postsecondary institution in economic development and worked more closely with business/industry leaders in program planning.

At high placement sites employers regarded the postsecondary institution as highly responsive, eager to plan and participate in economic development and skill upgrading of current and potential employees. Additionally job placement was enhanced by strong ties with the employment services and a high level of cooperation with economic developers in the community.

HIGHER JOB PLACEMENT EXISTS IN THOSE POSTSECONDARY INSTITUTIONS WHERE JOB PLACEMENT RATES ARE USED AS A PROGRAM EVALUATION CRITERION

At the highest job placement case study site the evaluation criterion was explicitly related to the job placement rate. Although other criteria regarding the quality of the programs were considered at sites with the highest of placement rates, job placement rates were clearly important for the evaluation of the vocational-technical education programs.

HIGHER JOB PLACEMENT EXISTS IN THOSE POSTSECONDARY INSTITUTIONS WHERE PROGRAM EVALUATION EFFORTS ARE SYSTEMATIC AND COMPREHENSIVE

Recommendations resulting from program evaluations, at high job placement sites were used to compare the program in order to maintain or enhance the job placement rates.

There appeared to be a strong positive relationship between high job placement rates and comprehensive program evaluation that not only used job placement rates as an evaluation criterion but followed through with the recommendations for program improvement.

Labor Market Factor

HIGHER JOB PLACEMENT EXISTS IN THOSE POSTSECONDARY INSTITUTIONS WHERE THERE IS A HIGH DEMAND FOR WORKERS IN THE SURROUNDING LABOR AREA

The majority of the interviewees at the case study sites emphasized that the most important factor in job placement was the rate of employment in the community. A frequent explanation was "If you've got jobs, you'll have high job placement." However, the correlational analysis revealed no significant relationship between labor force employment and job placement in related field.

Community Factor

HIGHER JOB PLACEMENT EXISTS IN THOSE POSTSECONDARY INSTITUTIONS WHERE THE COMMUNITY IS SUPPORTIVE OF VOCATIONAL-TECHNICAL EDUCATION

Most of the graduates of the highest job placement case study site, which was the only two-year public postsecondary school in the community, found jobs. The community strongly supported vocational-technical education as evidenced by public expression of the value of the program and by the allocation of tax dollars.

RECOMMENDATIONS

The study recommendations are directed toward agencies or policymaking groups who have historically developed and/or enforced policies and decisions regarding vocational-technical education programs. Policymakers and decision makers interested in optimizing the placement of former vocational-technical education students should give careful attention to the

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following recommendations. All of the recommendations deal with education factors over which vocational-technical educators have some control. Labor market and community characteristics that are associated with high rates of job placement are beyond the control of vocational-technical educators. The recommendations were derived from project staff analysis of the study conclusions juxtaposed with project staff knowledge of current situations in vocational-technical education. Other individuals operating from a different frame of reference may develop additional or somewhat different recommendations.

Congress

It is recommended that Congress:

- Recognize that vocational-technical education programs operate with multiple goals and therefore not specify specific criteria for the evaluation of such programs.
- Develop legislation that is flexible enough to allow state agencies to develop funding formulae that will encourage postsecondary institutions to conduct activities enhancing job placement.

U.S. Department of Education

It is recommended that the U.S. Department of Education:

- Encourage further research about the factors relating to job placement especially in isolated areas, inner cities, and areas with unique labor market or geographical locations.
- Encourage the dissemination of findings regarding the factors relating to job placement through the funding of symposia, workshops, monographs, and widely-distributed publications.

State Government Agencies

It is recommended that state governing agencies:

- Develop funding formulae that reward secondary schools and postsecondary institutions for implementing activities that enhance job placement.
- Provide teacher education institutions, postsecondary institutions and secondary schools with funding to conduct inservice education programs for instructors and administrators concerning the factors relating to job placement.
- Promote professional development activities that assist teachers in keeping up to date in their occupational skill area.

Postsecondary Institutions and Secondary Schools

It is recommended that postsecondary institutions and secondary schools:

- Develop clear statements of the goals for vocational-technical education programs.
- Promote and reward enthusiasm for placing students in jobs related to training.
- Encourage frequent and active meetings of citizen advisory committees and utilize their recommendations in program planning and evaluation.
- Use job placement data as a major criterion for evaluating programs.
- Recognize the importance of the role of teachers in the job placement process by including instructor performance concerning job placement in tenure, promotion, and salary adjustments.
- Recognize the importance of the role played by chief administrators and deans/directors in the job placement process. Reward chief administrators and deans/directors for their leadership and allocation of resources to attain institutional goals concerning job placement.
- Develop and maintain systematic processes for ensuring that the vocational-technical education curriculum is relevant and responsive to the needs of business and industry.

- Develop and maintain current and relevant job placement information in a central location that is easily accessible to instructors, job placement specialists, counselors, administrators, and students.

- Provide instructors with clerical support to assist in maintaining contact with employers and in preparing recommendations for students.

- Use local labor market information in program planning and evaluation.

- Maintain close contact with other agencies involved in job development/job placement in the community.

Teacher Education Institutions

It is recommended that teacher education institutions:

- Include in the courses required for secondary school and postsecondary institution administrators information concerning the goals of vocational-technical education programs, information about those factors enhancing the attainment of the goals, and information about the vital role of deans/directors in determining whether former students are placed in jobs related to their training.

- Impart to future vocational-technical educators the significant role instructors play in determining the placement of former students in jobs related to their training.

- Seek innovative ways to provide current education personnel with information about methods that will enhance job placement.

- Encourage school personnel to have frequent and active meetings of citizen advisory committees and utilize their recommendations in program planning and evaluation.

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ORGANIZATIONAL COMMITMENT OF COOPERATIVE EXTENSION SERVICE AGENTS

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INTRODUCTION

The turnover of vocational agriculture teachers and cooperative extension agents frequently results in an interruption of services in local communities. Our vocational agriculture teacher turnover has traditionally varied between ten and fifteen percent per year. Agriculture and home economics agent turnover has been much less. The turnover of 4-H agents in Ohio, however, has varied between twenty and twenty-five percent. Recent findings have indicated that organizational commitment is a better predictor of turnover than job satisfaction (Koch & Steers, 1976; Porter, et al, 1974).

Organizational commitment is characterized by at least three factors; (1) a strong belief in and acceptance of the organizations goals and values. (2) a willingness to exert considerable effort on behalf of the organization, and (3) a strong desire to maintain membership in the organization. Extension activities could not be carried out effectively and successfully without the agents' commitment to extension. Low commitment has been shown to be related to turnover and absenteeism. Both turnover and absenteeism can reduce the effectiveness of the extension service. One could also logically infer that commitment would be related to productivity. Because we are all interested in turnover, absenteeism, and productivity we should be aware that there are possible organizational policies and practices which might increase or decrease the level of commitment among professional personnel.

OBJECTIVES

The purpose of this study was to determine the major factors related to organizational commitment among county extension agents in the Ohio Cooperative Extension Service. The objectives of the study included:

1. To determine the level of commitment among agents in the OCES.
2. To determine whether there were differences in the level of commitment among agents: agriculture, home economics and 4-H.
3. To determine the relationship between organizational commitment and personal characteristics: age, sex, marital status, tenure, program area, major field of study and institution.
4. To determine the relationship between organizational commitment and job characteristics: skill variety, task identity, job autonomy and feedback.
5. To determine the relationship between organizational commitment and work experiences: role clarity, peer group cohesion, group attitudes toward OCES, realization of expectations, first-year job challenge, personal importance and self-image reinforcement.

This study included the following variables:

1. Independent variables

   a. Personal characteristics: age, sex, marital status, tenure, program area, and educational experiences

   b. Job characteristics: skill variety, task identity, job autonomy and feedback

   c. Work experiences: role clarity, peer group cohesion, group attitudes toward OCES, realization of expectations, first-year job challenge, personal importance and self-image reinforcement

2. Dependent variable: Organizational commitment

METHOD

The respondents of the study were 108 county extension agents in the Ohio Cooperative Extension Service. They were the agriculture agents (N=37), the home economics agents (N=36), and the 4-H agents (N=35). Of the 108 agents surveyed, 96 (89 percent) responded with usable questionnaires. There were 33 agriculture agents, 31 home economics agents, and 32 4-H agents.

Data were collected by mail questionnaires. The questionnaire was divided into four sections. The first section was designed to provide background information about the agents. The second section measured job characteristics adapted from an original questionnaire developed by Hackman and Lawler (1971). The third section was adapted from work experience scales developed by Buchanan (1974). The final section, developed by Porter et al. (1979), measured organizational commitment. The reliability (Cronbach's Alpha) of the job characteristics subscales ranged from .55 to .87 and the work experiences subscales ranged from .76 to .88. The reliability of the organizational commitment questionnaire was .90.

RESULTS

Findings

Relationships Among The Major variables of the study

Pearson product moment correlation coefficients were computed for the relationships between the independent variables and the dependent variable. The complete matrix is appended. Variables found to be positively related with organizational commitment were:

a. Personal Characteristics

   1. Age
   2. Being female
   3. Tenure

b. Job Characteristics

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4. Skill variety
5. Job autonomy
6. Feedback

c. Work Experiences

7. Role clarity
8. Peer group cohesion
9. Group attitudes toward OCES
10. Realization of expectations
11. First-year job challenge
12. Personal importance
13. Self-image reinforcement

Marital status and task identity were found to be not related to organizational commitment.

Step-Wise Multiple Regression Analysis

The maximum R-square improvement technique was used in the step-wise multiple regression analysis. This procedure allowed the researcher to look for the best single predictor and the best group predictor of organizational commitment. The data are presented in Tables 1 and 2.

The single most important predictor of organizational commitment was found to be self-image reinforcement (see Table 1). Forty-nine percent of the variance in organizational commitment could be explained by knowledge of self-image reinforcement.

Table 1

Best Single Predictor of Organizational Commitment

Variable	R	R-Square	Beta	F
Self-image reinforcement	.7014	.4919	.4681	91.03*

*Significant at the .001 level.

The best group predictor of organizational commitment included the following variables: personal importance, group attitudes toward OCES, job autonomy, sex and tenure. These variables as a group accounted for sixty-seven percent of the variance in organizational commitment. Of this sixty-seven percent:

1. Sixty-eight percent of the variance could be explained by personal importance (.4533/.6678).
2. An additional seventeen percent of the variance could be explained by group attitudes toward OCES (.1102/.6678).
3. An additional five percent of the variance could be explained by job autonomy (.0344/.6678).

4. An additional four percent of the variance could be explained by sex (.0285/.6678).
5. An additional six percent of the variance could be explained by tenure (.0414/.6678).

Table 2

Step-Wise Multiple Regression of Organizational Commitment on Five Independent Variables

Variables	R	R^2	R^2 Increment	Beta	F
Personal importance	.6733	.4533	.4533	.5486	77.95*
Group attitudes	.7507	.5635	.1102	.3258	60.04*
Job autonomy	.7732	.5979	.0344	.2133	45.62*
Sex	.7914	.6264	.0285	.3393	38.14*
Tenure	.8172	.6678	.0414	.2306	36.19*

*Significant at the .001 level.

Discussion

Personal Characteristics

Age and tenure. There was a positive relationship between age and organizational commitment (r = .40). This finding was similar to what Sheldon (1971) found with Ph.D. scientists. It indicates that older agents had a higher level of commitment than younger agents. There was also a positive relationship between tenure and organizational commitment (r = .34). This finding was similar to what Sheldon (1971) found with Ph.D. scientists. It indicates that agents who had longer tenure were more committed to the OCES than agents who had shorter tenure. Age and tenure were closely interrelated (r = .71). Agents who had been employed for a longer period of time would be more familiar with the county situation, its people and the facts relating to extension. They also are more vested in retirement systems and thus less likely to seek other employment.

Sex. There was a higher level of commitment among the female agents than the male agents. This finding was similar to what Hrebiniak and Alutto (1972) found with school teachers and registered nurses.

Marital status. The hypothesized relationship between marital status and organizational commitment was not supported, even though agents who were married tended to have higher commitment than those who were single. In one study done by Hrebiniak and Alutto (1972), it was found that single respondents were more likely to leave the organization than those who were married.

Program area. Comparing among the three groups of agents, there was no siginficant difference in the level of commitment between agriculture agents and home economics agents. However, there was a significant difference in the level of commitment between 4-H agents and agriculture or home economics agents. The low commitment among 4-H agents could be due to the fact that they had shorter tenure than agriculture or home economics agents. It was found that 4-H agents tended to have a higher level of commitment during the first-year period, (figure 1). The commitment level decreased during the second through fourth year period, and then increased again as tenure increased. On the contrary, the levels of commitment among agriculture and home economics agents tended to consistently increase with tenure.

Major field of study. Duncan's test indicated that there was no difference in the levels of commitment among agents from different major fields of study at the graduate level. At the undergraduate level there was no significant difference in the levels of commitment agricultural education majors and other agriculture or home economics majors. But there was a significant difference in the levels of commitment between agents who majored in other areas and agents who majored in agricultural education and other agriculture or home economics. The low commitment level among agents who majored in other areas could be due to the fact that they were not familiar with extension work because their major fields of study were not related to agriculture or home economics.

Institution. Duncan's test indicated that there was no significant difference in the level of commitment among agents from different institutions, both at the undergraduate and graduate levels.

Job Characteristics

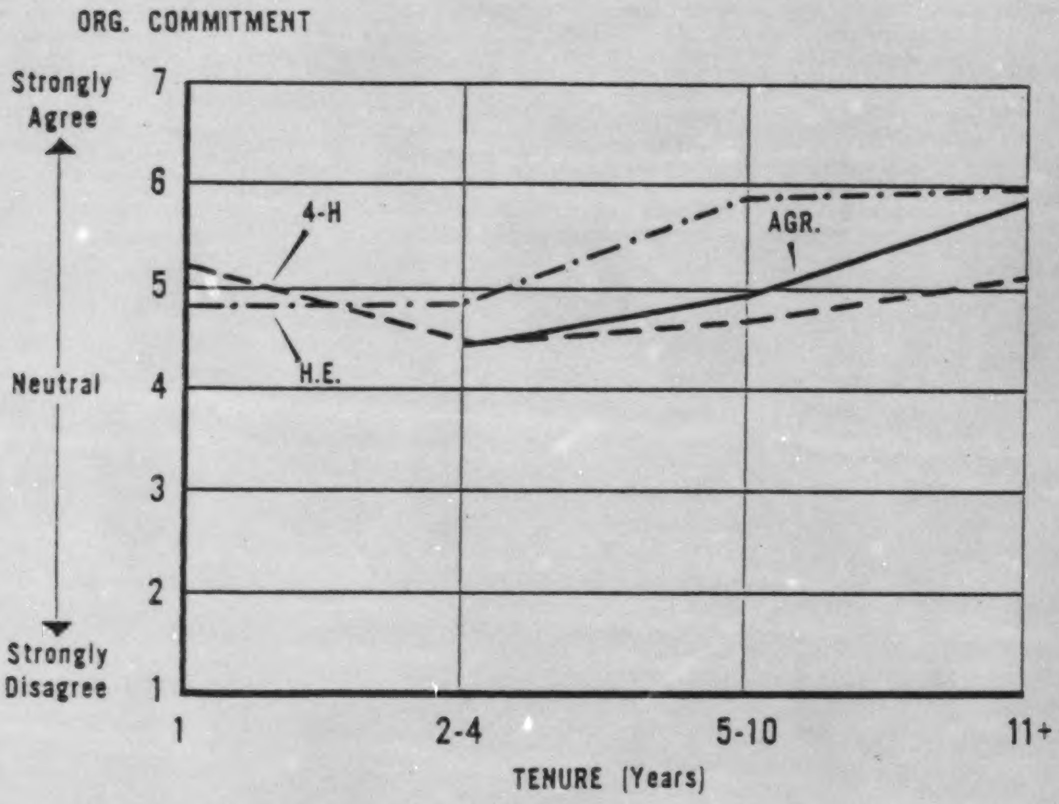
Skill variety. There was a positive relationship between skill variety and organizational commitment (r = .20). This indicates that agents tended to be more committed to the OCES if they felt that there was adequate skill variety present in their jobs. The extension administrators and supervisors should ensure that agents' work involves the use of a number of different skills and talents. It should be noted that 4-H agents had lower score on skill variety compared to agriculture and home economics agents. This implies that 4-H agents perceived that their jobs did not have enough variety.

Task identity. There was no significant relationship between task identity and organizational commitment.

Job autonomy. There was a positive relationship between job autonomy and organizational commitment (r = .44). This implies that agents tended to be more committed to the OCES if they perceived that there was adequate autonomy in doing their work. Supervisors should make sure that agents have substantial freedom and independence in planning, implementing and evaluating extension programs.

Feedback. There was a positive relationship between feedback and organizational commitment (r = .31). This finding was similar to what Porter and Steers (1973) found with psychiatric technicians. This indicates that agents tended to be more committed to the OCES if they perceived that they had received an adequate amount of feedback on their work performances. It was found that the overall mean score on feedback was low for all agents. This indicates that many agents perceived that they had not received enough feedback on their work performances. The writer feels that agents should be informed about not only how well they are performing their jobs but also whether their performance is improving, deteriorating, or remaining the same. Positive feedback is important because it increases agents' feelings of personal worth about their work.

Fig. 1 Agent's Perception of Their Extension Commitment



NOTE: No Ag. Agents were in the sample with one year of tenure or less.

Work Experiences

Role clarity. There was a positive relationship between role clarity and organizational commitment (r = .45). This finding was similar to what Buchanan (1974) found with business and government managers. This indicates that agents tended to be more committed to the OCES if they were clear on what to do on the job. It is the responsibility of the supervisors to let agents know exactly what to do during the process of program planning, program strategy, program implementation and program evaluation.

Peer group cohesion. There was a positive relationship between peer group cohesion and organizational commitment (r = .38). This is similar to what Sheldon (1971) found with Ph.D. scientists. It indicates that agents tended to be more committed to the OCES if they had close friendships within the organization. Frequent contacts and meetings among agents and supervisors are necessary to establish better relationships.

Group attitudes toward OCES. There was a positive relationship between group attitudes and organizational commitment (r = .69). This finding was similar to what Buchanan (1974) found with managers. It indicates that agents tended to be more committed to the OCES if they worked with other agents who expressed positive attitudes toward the OCES.

Realization of expectations. Consistent with what Sheldon (1971) found, there was a positive relationship between realization of expectations and organizational commitment (r = .51). This implies that agents tended to be more committed to the OCES if most of their expectations were met. Some agents perceived that their expectations before joining the OCES were different from what they found after joining it. Job descriptions and time and effort expectations should be communicated to agents who are beginning with the OCES.

First-year job challenge. Consistent with what Buchanan (1974) found, there was a positive relationship between job challenge and organizational commitment (r = .43). This indicates that agents tended to be more committed to the OCES if they perceived that their jobs were challenging and interesting. Extension administrators should be concerned with the low level of commitment among 4-H agents. Job analysis may be necessary to revise the job requirements and responsibilities of 4-H agents. Some 4-H agents felt that they did not have specific job responsibilities compared to what were given to agriculture or home economics agents. The notion of job enrichment in 4-H may be considered by the extension administrators to make 4-H work more challenging and interesting.

Personal importance. There was a positive relationship between personal importance and organizational commitment (r = .67). It indicates that agents tended to be more committed to the OCES if they perceived that they had given substantial contributions to the OCES. The extension administrators and supervisors should always remind the agents that their work is important to the clientele. Frequent feedback should be provided to agents by administrators and clientele.

Self-image reinforcement. There was a positive relationship between self-image reinforcement and organizational commitment. This is similar to what Buchanan (1974) found with business and government managers. Many agents perceived that they were not able to establish their own self-image in the OCES. In other words, many agents felt that there was often pressure to behave in ways that did not represent their true feelings.

The results of this study were generally consistent with previous findings of other researchers in the field of organizational psychology. From the stepwise multiple regression analysis, self-image reinforcement was found to be the best single predictor of organizational commitment. The best group predictor of organizational commitment included the following variables: personal importance, group attitudes toward OCES, job autonomy, sex and tenure.

RECOMMENDATIONS

This study has provided some evidence that there are factors related to agents' commitment toward the Ohio Cooperative Extension Service. The following recommendations for further research are made on the basis of the findings of this study:

1. Conduct additional studies to determine the level of commitment among assistant agents, county chairmen, area supervisors and extension specialists in the OCES.

2. Conduct additional studies using additional variables such as salary, central life interests and job satisfaction, which may be related to organizational commitment.

3. Conduct future studies focusing on the influence of organizational commitment on absenteeism and turnover among agents.

4. Conduct future studies focusing on the relationships between job satisfaction, organizational commitment and turnover.

5. Conduct future studies focusing on the relationship between organizational commitment and work performance.

6. Examine the concept of organizational commitment to determine the construct which would be useful in the Cooperative Extension Service.

This study has provided some evidence that there are factors related to agents' commitment toward the Ohio Cooperative Extension Service. This evidence can be used in hypothesizing and testing for vocational agriculture teachers relationships between organizational commitment and similar factors. Once the factors related to organizational commitment are known, one can use the information in recruitment and selection, and in changing the organization so that greater commitment can be achieved.

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APPENDIX

Pearson Product Moment Correlation Coefficients for the Major Variables

Variables	OCQ	1	2	3	4	5	6
1. Age	.40**						
2. Sex	.21*	-.15					
3. Marital Status	.09	.42**	-.50**				
4. Tenure	.34**	.71**	-.29**	.45**			
5. Skill Variety	.21*	.11	.16	-.04	-.00		
6. Task Identity	.16	.03	.25**	-.02	-.01	.17	
7. Job Autonomy	.44**	.25**	-.01	.18	.25**	.12	.36**
8. Feedback	.31**	.23*	.06	.14	.06	.11	.07
9. Role Clarity	.45**	.24**	.15	.05	.12	-.06	.13
10. Peer Group Cohesion	.38**	.17	.16	.08	.07	.27	.30**
11. Group Attitudes	.61**	.26**	.04	.10	.14	.17	.00
12. Realization of Expectations	.51**	.28**	.16	.14	.23*	.03	.07
13. Job Challenge	.43**	.19*	.11	.07	.11	.16	.06
14. Personal Importance	.67**	.37**	.07	.17	.25**	.22*	.09
15. Self-Image Reinforcement	.70**	.42**	.12	.16	.30**	.22*	.07

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX-continued

Variables	7	8	9	10	11	12	13	14
1. Age								
2. Sex								
3. Marital Status								
4. Tenure								
5. Skill Variety								
6. Task Identity								
7. Job Autonomy								
8. Feedback	.12							
9. Role Clarity	.20*	.34**						
10. Peer Group Cohesion	.42**	.26**	.18					
11. Group Attitudes	.26**	.38**	.46**	.26**				
12. Realization of Expectations	.31**	.27**	.35**	.38**	.42**			
13. Job Challenge	.19*	.15	.36**	.14	.35**	.40**		
14. Personal Importance	.33**	.27**	.46**	.38**	.47**	.42**	.63**	
15. Self-Image Reinforcement	.44**	.32**	.42**	.49**	.67**	.19*	.37**	.42**

* Significant at the .05 level.

** Significant at the .01 level.

ASSESSING TRENDS IN EDUCATIONAL AND OCCUPATIONAL ASPIRATIONS OF STUDENTS IN AGRICULTURE MAJORS

by

Blannie E. Bowen and Jasper S. Lee*

INTRODUCTION

Several investigators have begun in recent years to study students enrolled in institutions of higher learning who are pursuing majors in various areas of agriculture. The primary focus of most of these investigations has been to describe and establish a profile for this group of students. The National Association of State Universities and Land Grant Colleges does this on a limited basis each year by releasing reports showing enrollments in agricultural curricula for colleges in the United States. Daluge and Thompson (1981) introduced a time variable into their investigation of students applying for admission to the University of Wisconsin-Madison, College of Agricultural and Life Sciences. These researchers surveyed persons applying for admission in the fall of 1975 and four years later, they used university records to determine the status of this group of students.

A regional study supported by the USDA/Cooperative State Research Service, Project S-114, was conducted in 1977 to describe higher education in agriculture and home economics in the South. Data were collected from a sample of students enrolled in agriculture at 26 institutions, all except one being classified as a land-grant institution. This data bank, consisting of 3,075 students, has been used by researchers to provide in-depth analyses on selected sub-groups of students (Dunkelberger, et al., 1981a, 1981b; Adrian, et al., 1981; Molnar and Dunkelberger, 1981).

Despite the scope and depth of this regional project (13 states), its use is limited to descriptions and projections for only one point in time, 1977. Researchers at Mississippi State University felt that their college of agriculture students had changed since the 1977 study and a new investigation was needed. Since another regional project was not possible, the researchers replicated the regional study using only students at their University.

By collecting the data at a five-year interval, it would be possible to introduce a time factor when describing and making projections about college of agriculture students. As noted by Van Dalen (1979, p. 341-342), however, long range predictions are mere estimates and somtimes reverse short-term predictions. Van Dalen also indicated that short-term projections possess greater certainty as opposed to long range. The study also permits short-term analyses of data about agricultural education as well as other college of agriculture majors.

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OBJECTIVES OF THE STUDY

The design of the study permits an analysis and description of trends that may be developing after five years for both agricultural education majors and other college of agriculture majors. Specifically, the study sought:

1. To describe and compare selected characteristics of students enrolled in colleges of agriculture in the South in 1977 and at Mississippi State University in 1982.

2. To identify enrollment trends that may be developing regarding selected variables.

3. To assess the merits of selected family variables as indicators of educational aspirations of college of agriculture students.

4. To determine whether educational goals of college of agriculture students may be determined using selected variables.

METHODS AND PROCEDURES

Previously collected data on agriculture students enrolled in 26 institutions in 13 Southern states were extracted from the USDA/CSRS regional project, S-114 (Parent, 1979; Howell and Parent, 1979). This data bank included 131 Mississippi State University students who responded to the 1977 mailed questionnaire (131 of 173 students returned the instrument). The response rate for the region was 69.4 percent (3,417 of 4,924 students responded) for the instrument developed and validated by the scientists who conducted the S-114 Project. These scientists took at 15% stratified random sample of agriculture majors at 1862 land-grant institutions and a census of the 1890 land grant agriculture majors. After collecting the data, all graduate students and any students who were not black or white were eliminated from the study; thus, the sample included 3,075 students. The sample was then weighted to reduce the influence of the 1890 institutions since a census of these institutions had been used (Howell and Parent, 1979).

The design and instrumentation for the 1982 study were identical to those of the 1977 study; data collection procedures differed slightly. A stratified random sample of 312 agriculture majors enrolled in the College of Agriculture and Home Economics at Mississippi State University the spring semester, 1982, was chosen for the study. These students received the same instrument used in the 1977 study. Four weeks were used to collect the data, beginning April 19 and ending May 14. Copies of the instrument were distributed to a faculty contact for each major; students were instructed to return the instrument to the contact persons or to the scientists doing the study.

After two weeks, persons who had not returned the questionnaire were mailed a second copy. Reminder telephone calls were placed during the fourth week. These strategies resulted in 229 or 73.4 percent of the questionnaires being returned. Using data available from several sources, the nonrespondents were compared with the respondents on five variables. The two groups were very similar (p>.05) on high school and college grade point averages, classification, sex, and ACT scores.

SELECTED FINDINGS

The findings are reported in four areas in this paper: enrollment trends relative to demographic variables, characteristics of agriculture and agricultural education majors, factors influencing choice of major, and educational goals of agriculture majors.

Demographic Trends

Age and Sex. Students pursuing agriculture majors at Mississippi State University ranged from 18 to 33 years of age. In both 1977 and 1982, slightly less than two percent of the students were over 30. Mean ages for both years were extremely similar, 20.9 in 1977 and 21.0 in 1982. Females made up just over 19 percent of the 1977 sample and almost 24 percent in 1982. The 1977 Southern Region Study found that 73 percent of the agriculture majors were males and 27 percent females (see Table 1).

Table 1

SEX OF STUDENTS IN AGRICULTURE MAJORS
IN 1977 AND 1982

	Southern Region 1977		MSU 1977		MSU 1982	
SEX	n	%	n	%	n	%
Male	2,244	73.0	106	80.9	175	76.4
Female	831	27.0	25	19.1	54	23.6
Total	3,075	100.0	131	100.0	229	100.0

Classification. In the 1977 MSU sample, 32 percent were classified as seniors, another 32 percent juniors, 22 percent sophomores, and 14 percent freshmen. In 1982, the MSU sample was comprised of 37 percent seniors, 29 percent juniors, 19 percent sophomores, and 15 percent freshmen. This compares to the 1977 Southern Region study where 32 percent were seniors, 27 percent were juniors, 22 percent were sophomores, and 18 percent were freshmen (see Table 2).

Residence. Thirty-nine percent of the MSU students were from urban areas in 1977 while 43 percent of the students in 1982 resided in urban areas. Of those students residing in rural areas, 34 percent in 1977 and 31 percent in 1982 were living on farms. For both 1977 and 1982, just over 25 percent of the students lived in rural areas, but did not reside on farms. For the Southern Region, 56 percent lived in urban areas, 23 percent in rural, nonfarm areas, and 21 percent on farms.

Table 2

CLASSIFICATION OF AGRICULTURE STUDENTS

CLASS	Southern Region 1977		MSU 1977		MSU 1982	
	n	%	n	%	n	%
Freshman	563	18.3	18	13.8	34	15.0
Sophomore	688	22.4	29	22.3	43	18.9
Junior	829	27.0	41	31.6	66	29.1
Senior	995	32.3	42	32.3	84	37.0
(Missing)	-	-	(1)	-	(2)	-
Total	3,075	100.0	131	100.0	229	100.0

Table 3

RESIDENCE STATUS OF AGRICULTURAL STUDENTS IN THE COLLEGE OF AGRICULTURE AND HOME ECONOMICS IN 1977 AND 1982

RESIDENCE	Southern Region 1977		MSU 1977		MSU 1982	
	n	%	n	%	n	%
Urban (Towns>10,000)	1,738	56.5	51	39.2	98	42.8
Rural, Non-farm	707	23.0	35	26.9	59	25.8
Rural, Farm	630	20.5	44	33.9	72	31.4
(Missing)	-	-	(1)	-	-	-
Total	3,075	100.0	131	100.0	229	100.0

Marital Status. The percentage of agriculture students at MSU who were married dropped substantially from 1977 to 1982. Table 4 indicates that 16 percent of the students were married in 1977 while just over seven percent were married in 1982. In 1977 in the Southern Region, 14 percent were married.

Table 4

MARITAL STATUS OF STUDENTS IN AGRICULTURE MAJORS
IN 1977 AND 1982

MARITAL STATUS	Southern Region 1977		MSU 1977		MSU 1982	
	n	%	n	%	n	%
Single	2,654	86.3	109	83.3	212	92.6
Married	421	13.7	21	16.2	17	7.4
(Missing)	-	-	(1)	-	-	-
Total	3,075	100.0	131	100.0	229	100.0

Characteristics of Agriculture and Agricultural Education Majors

High School Attended. Most of the agriculture students at MSU in both 1977 and 1982 had graduated from public high schools. In 1977, just over 68 percent of the students had graduated from public high schools. For the 1982 sample, however, this figure had dropped to 57 percent. The percentage of students graduating from private, non-religious high schools increased from 25 percent in 1977 to 34 percent in 1982. The percentage graduating from private, religious high schools increased from seven percent in 1977 to almost nine percent in 1982. In 1977 in the Southern Region, 88 percent had graduated from public schools, whereas, 97 percent of the agricultural education majors in the Region had graduated from public high schools. Table 5 presents a summary of these data on type of high school from which the students graduated.

High School Average. The MSU students enrolled in agriculture majors in 1977 had a mean high school grade point average of 2.95. The 1982 data revealed that the grade point average for the MSU students was 2.96, and 2.83 for MSU Agricultural and Extension majors. For the Southern Region in 1977, the high school grade point average was 3.01 and 2.88 for agricultural education majors. Table 6 presents a distribution of high school averages of students enrolled in agriculture and agricultural education majors for both 1977 and 1982.

Agriculture Courses Taken. Slightly over 75 percent of the MSU students pursuing majors in agriculture during both 1977 and 1982 had not participated in high school vocational agriculture classes. At least 60 percent of the students in both samples reported that agricultural courses were not offered by their high schools. In the Southern Region in 1977, 25 percent of the agriculture majors had been enrolled in vocational agriculture. For the agricultural education majors, 82 percent had been enrolled in vocational agriculture. Table 7 presents the findings.

Table 5

TYPE OF HIGH SCHOOL ATTENDED BY AGRICULTURE AND AGRICULTURAL EDUCATION MAJORS, 1977 AND 1982

	Southern Region 1977		MSU 1977		MSU 1982	
TYPE OF SCHOOL	n	%	n	%	n	%
All agriculture majors						
Public	2,715	88.3	88	68.2	130	57.0
Private, Religious	206	6.7	9	7.0	20	8.8
Private, Non-Religious	154	5.0	32	24.8	78	34.2
(Missing)	-	-	(2)	-	(1)	-
Total	3,075	100.0	131	100.0	229	100.0
Agricultural Education majors						
Public	242	96.8	-	-	18	78.3
Private, Religious	8	3.2	-	-	5	21.7
(Missing)	(8)	-	-	-	-	-
Total	258	100.0	-	-	23	100.0

Table 6

HIGH SCHOOL GRADE POINT AVERAGES FOR AGRICULTURE AND AGRICULTURAL EDUCATION MAJORS IN 1977 AND 1982

	Southern Region 1977		MSU 1977		MSU 1982	
GRADE	n	%	n	%	n	%
All agriculture majors						
A	686	22.3	28	21.6	51	22.3
B	1,747	56.8	67	51.5	119	52.2
C	630	20.5	35	26.9	56	24.6
D	12	.4	-	-	2	.9
(Missing)	-	-	(1)	-	(1)	-
Total	3,075	100.0	131	100.0	229	100.0
Mean GPA:	3.01		2.95		2.96	
Agricultural Education majors						
A	32	12.9	-	-	4	17.4
B	154	62.1	-	-	11	47.8
C	62	25.0	-	-	8	34.8
(Missing)	(10)	-	-	-	-	-
Total	258	100.0	-	-	23	100.0
Mean GPA:	2.88				2.83	

Table 7

STUDENTS WHO HAD BEEN ENROLLED IN VOCATIONAL AGRICULTURE CLASSES IN HIGH SCHOOL

AGRICULTURAL CLASSES TAKEN	Southern Region 1977		MSU 1977		MSU 1982	
	n	%	n	%	n	%
All agriculture majors						
Yes	770	25.0	29	22.7	56	24.5
No	2,305	75.0	99	77.3	173	75.5
(Missing)	-	-	(3)	-	-	-
Total	3,075	100.0	131	100.0	229	100.0
Agricultural Education majors						
Yes	205	82.0	-	-	15	65.2
No	45	18.0	-	-	8	34.8
(Missing)	(8)	-	-	-	-	-
Total	258	100.0	-	-	23	100.0

Attendance at Other Colleges. Forty-nine percent of the students in the agriculture majors enrolled at Mississippi State University straight after high school in both 1977 and 1982. Of the remaining 51 percent in each sample, 38 percent of the 1977 sample transferred from 2-year colleges, while 40 percent did so in 1982. The remainder of students transferred from other institutions. In the 1977 Southern region survey, 64.8 percent enrolled after high school while 35.2 percent had transferred to the agriculture major (17.1 from other four-year institutions and 18.1 from two-year colleges).

Work Experience of Students. Students in the study had had a variety of work experiences. They were asked about four types of experience, and the percentage of students acquiring each type was very similar. At least 60 percent of the MSU students had home farm experience, almost half had worked on farms other than the home farm, over 65 percent had other agricultural experiences, and almost 90 percent in each sample had non-agricultural types of experiences. Table 8 summarizes the work experiences of the samples.

Factors and Individuals Influencing Selection of Major

Individuals Influencing Choice of Major. In both 1977 and 1982, students at Mississippi State University rated their parents (father first, mother second) as having the greatest influence upon their choice of college major. Two other individuals of strong influence were college teachers/advisors and college friends. Both groups were similar in their ranking of individuals of influence.

There were no appreciable differences in the MSU and southern region students in 1977. Table 9 presents a summary of the rankings.

Table 8

WORK EXPERIENCE OF AGRICULTURE MAJORS

WORK EXPERIENCE	Southern Region 1977		MSU 1977		MSU 1982	
	n^a	%Yes	n^b	%Yes	n^c	%Yes
Home farm experience	1,561	50.8	122	61.5	211	66.8
Other farm employee	1,549	50.4	110	48.2	209	54.1
Other work experience	1,869	60.9	123	89.4	201	88.1

n^a - 3,075 in sample
n^b - 131 in sample
n^c - 229 in sample

Table 9

INDIVIDUALS INFLUENCING CHOICE OF AGRICULTURE MAJOR

INDIVIDUAL OF INFLUENCE	Southern Region 1977 (n=3,075)			MSU 1977 (n=131)			MSU 1982 (n=229)		
	$\bar{x}$	SD	RANK	$\bar{x}$	SD	RANK	$\bar{x}$	SD	RANK
Father	1.87	.76	1	2.06	.79	1	2.11	.77	1
Mother	1.79	.72	2	1.82	.67	2	1.87	.69	2
College teacher/ advisor	1.56	.75	3	1.61	.79	3	1.50	.69	3
College friend	1.51	.70	4	1.44	.62	4	1.47	.65	4
Brother	1.36	.64	6	1.42	.63	5	1.37	.64	6
Veterinarian	1.33	.65	10	1.37	.74	6	1.28	.61	8
H. S. friend	1.36	.61	6	1.33	.63	7	1.32	.57	7
Former student	1.35	.64	8	1.32	.63	8	1.43	.65	5
Sister	1.28	.56	12	1.30	.52	9	1.24	.55	11
Other teacher/ principal	1.35	.62	8	1.26	.54	10	1.26	.51	9
H. S. counselor	1.29	.58	11	1.21	.46	11	1.21	.49	13
Vo-Ag. teacher	1.34	.68	9	1.18	.53	12	1.25	.61	10
Extension agent	1.18	.49	13	1.16	.43	13	1.22	.54	12

Means: 1=No Influence, 2=Some Influence, 3=Very Influential
W=.94

Other Factors Influencing Major. Students were asked to rate the extent of importance of 13 selected factors on their choice of major. Of primary importance to MSU students in both 1977 and 1982 was career preparation and desired lifestyle. In the Southern region, career preparation and desired lifestyle were of primary importance. The ranking of these factors is presented in Table 10.

Table 10

IMPORTANCE OF SELECTED FACTORS ON CHOICE OF AGRICULTURE MAJOR

	Southern Region 1977 (n=3,075)			MSU 1977 (n=131)			MSU 1982 (n=229)		
FACTOR	$\bar{x}$	SD	RANK	$\bar{x}$	SD	RANK	$\bar{x}$	SD	RANK
Career preparation	2.68	.57	1	2.66	.64	1	2.76	.49	1
Style of life	2.18	.82	2	2.18	.84	2	2.13	.83	2
Prior ag experiences	1.76	.83	5	1.94	.86	3	1.90	.84	4
Good income	1.84	.76	4	1.91	.74	4	1.77	.72	5
Help others	2.09	.74	3	1.90	.77	5	1.95	.75	3
College courses	1.45	.71	6	1.43	.72	6	1.37	.66	6
College teacher/ advisor	1.31	.59	9	1.34	.63	8	1.32	.58	8
Scholarships/ financial aid	1.40	.72	7	1.34	.67	8	1.31	.64	9
Family	1.27	.52	10	1.31	.54	9	1.34	.56	7
Friends in major	1.22	.48	12	1.26	.51	10	1.27	.52	12
Better grades	1.26	.54	11	1.25	.51	11	1.28	.56	11
H. S. counselor	1.21	.51	13	1.18	.46	12	1.16	.44	13
H. S. courses	1.33	.63	8	1.17	.50	13	1.28	.60	11

Means: 1=No Importance, 2=Some Importance, 3=Very Important
W=.96

The students were asked to respond to selected career-related items to measure their social and occupational attitudes. Students responded by indicating their agreement or disagreement with these variables. Table 11 presents the means and standard deviations for each item for both the 1977 and 1982 samples.

Educational Goals of Agriculture Majors

Selected relationships involving educational goals will be discussed for five groups of agriculture students: the region, 1977 (n=3,075), the 1977 regional agricultural education students (n=258), the 1977 MSU students (n=131), the 1982 MSU students (n=229), and the 1982 MSU agricultural and Extension education students (n=23). For each of the five groups, the level of education possessed by mothers had negligible, if any (r<.15), relationship with the students' high school or college grade point averages, their desired education, their expected education, and the amount of money expected from their first job after graduation. Identical results were found for the fathers. Although parents' education had little relationship with these five variables, mothers' education and fathers' education were substantially related across all five groups (r ranged from .45 to .85, $p<.01$). When the students' desired and expected education were compared, substantial relationships were found for all of the groups except the 1982 MSU agricultural education students (r ranged from .58 to .68, $p<.01$).

Table 11

ATTITUDES OF AGRICULTURE MAJORS TOWARD SELECTED CAREER VARIABLES

SELECTED CAREER VARIABLE	Southern Region 1977 (n=3,075)		MSU 1977 (n=131)		MSU 1982 (n=229)	
	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD
Women should receive equal pay for equal work	4.53	.67	4.57	.53	4.35	.86
Would feel uncomfortable with woman supervisor	2.23	1.16	2.43	1.28	2.44	1.13
Women as capable as men in working outside the home	3.61	1.14	3.37	1.23	3.50	1.12
Agricultural occupations unsuitable to women	2.51	1.08	2.70	1.17	2.71	1.14
Good career opportunities in agriculture	4.31	.79	4.35	.84	4.03	.94
Little education needed in agriculture	2.28	1.00	2.20	1.04	2.16	1.02
Agriculture is declining industry	1.78	1.06	1.65	.99	2.07	1.17

Means: 1=Strongly disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly agree

Degree Expectations. The 1977 regional agricultural education students, the 1977 MSU students, and the 1982 MSU students were dichotomized based upon their degree expectations: expect to gain a bachelor's degree only and expect to earn a graduate degree. A stepwise discriminant analysis was used to assess whether selected variables could be used to accurately place the students into the two expected degree categories (Klecka, 1981, p. 49-50). The data in Table 12 indicate that the agricultural education students could not be accurately categorized. The 1977 MSU students could be accurately categorized, but the accuracy for 1982 MSU students just missed the cut-off standard suggested by Hair et al. (1979, p. 100-103). Since the classification accuracy of the 1982 students was very close to the standard, this group will be compared with the 1977 MSU students for practical and educational reasons. An inspection of Table 13 shows that grade point average, club participation, expected income on first job after graduation, influence and education of father, and size of high school graduating class were useful in categorizing students by type of expected degree.

Table 12

DISCRIMINANT ANALYSIS FOR AGRICULTURE STUDENTS EXPECTING BACHELORS DEGREES ONLY AND THOSE EXPECTING GRADUATE DEGREES

Function Derived	Eigenvalue	Canonical R	Wilks Lambda	Chi Square	d.f.	Sig.
Regional Ag Ed, 1977*	.12	.32	.89	23.8	4	.0001*
MSU, 1977	.24	.44	.80	24.1	4	.0001
MSU, 1982	.16	.37	.86	28.6	5	.0000

Discriminant Function	Highest Expected Degree		Classification Expected %		Accuracy Obtained %
	Bachelors	Graduate	Chance%	25%>Chance	
Regional Ag Ed, 1977	76	143	54.5	68.1*	62.8*
MSU, 1977	78	38	55.8	69.8	75.6
MSU, 1982	133	70	55.2	69.0**	66.8**

* - Although this function is statistically significant, it fails to meet the expected classification accuracy standard specified by Hair, et al. (1979) and does not merit further discussion.

** - The classification accuracy is slightly less than expected, but will be discussed because of educational significance.

Table 13

INTERPRETATION OF DISCRIMINANT FUNCTIONS FOR STUDENTS EXPECTING BACHELORS DEGREES ONLY AND THOSE EXPECTING GRADUATE DEGREES

Discriminating Variables	F to Enter^a	Wilks Lambda	Standardized Discriminant Coefficient
- MSU, 1977 Function			
·College GPA	20.53*	.85	.92
·College Club Participation	4.47*	.83	.25
·First Job Expected Income	2.09	.81	.27
·Father's Influence on Major	.45	.80	.24

Table 13 (continued)

Discriminating Variables	F to Enter[a]	Wilks Lambda	Standardized Discriminant Coefficient
-MSU, 1982 Function			
·H. S. GPA	13.16**	.94	.61
·First Job Expected Income	9.78**	.90	.43
·Father's Education	5.04**	.88	.36
·H. S. Club Participation	6.26**	.87	.31
·Size of H. S. Grad. Class	2.02	.86	.30

[a] - Only variables reducing Wilks Lambda by .01 were included in the discriminant set.

* - p<.05, d.f.=1, 114; ** - p<.05, d.f.=1, 201

CONCLUSIONS AND IMPLICATIONS

Based upon the findings of this study, several conclusions and implications are possible relative to the regional students of 1977 and the 1982 MSU students. For the MSU students, there appears to be a slight trend developing in terms of the number of single students and the number of students from private high schools who select agriculture majors. When comparing agricultural education majors with the other students, the agricultural education majors tended to be from public high schools, have had high school vocational agriculture, and had slightly lower high school grade point averages.

For all of the students, mothers and fathers tended to be most influential in the choice of major, and the students tended to select their majors because of style of life and career preparation reasons. Although selected variables were identified that were useful in classifying students by type of expected degree, other such variables must be identified to improve the classification accuracy before a model of this type is useful for predictive purposes. Comparable data for the Southern region are needed to assess trends relative to agricultural education students.

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A DISCUSSION OF RESEARCH REPORTS PRESENTED ON INSTRUCTIONAL MATERIALS*

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Discussants at research conferences are presented with quite a challenge. We are asked to review manuscripts and to analyze the strengths and weaknesses of the research reported without the benefit of interaction with the researchers. We are asked to be constructively critical without being harsh. I submit to you that no one enjoys criticism, however constructive or tactful it may be. To submit one's work to this sort of close scrutiny, especially among a group of colleagues, demands a great deal of courage. It may take even more courage, however, to be the scrutinizer than to be the "scrutinee".

I am convinced, though, that this aspect of our conference is absolutely essential for the improvement of research. Having my own research critiqued in the past has made me a better researcher. Listening to and reading the critiques of other discussants has made me a better researcher. Therefore, when asked to assume the role of a discussant at this conference, I readily accepted, not because I enjoy critiquing others, but because I know it is good for our profession and for my own professional development. It is within this context that I approached my assignment.

REPORT I.

IMPACT OF A SUPERVISED OCCUPATIONAL EXPERIENCE INSTRUCTIONAL PACKET ON IOWA VOCATIONAL AGRICULTURE STUDENTS AS MEASURED BY A WORK VALUES INVENTORY

Strengths

There are many strong points in this research. The manuscript is generally well written. The research is reported clearly and succinctly, and with the use of non-sexist language. The research design was clearly formulated, and the random sampling technique was appropriate. The on-site visits to the schools to administer the instruments certainly made the data collection procedures more consistent and objective than the usual approach of mailed questionnaires.

The hypotheses were clearly stated, the tables were well designed and the discussion was reported clearly and objectively. Appropriate statistics were used to test the hypotheses. The researchers have contributed knowledge to an area that deserves our attention and some interesting possibilities for further study have been identified.

Before I make some suggestions for improvement and raise some questions, may I affirm the researchers. The strengths just mentioned are highly commendable. If all of our research in agricultural education could meet these standards, we would be in pretty good shape.

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*A discussion paper presented at the Ninth Annual National Agricultural Education Research Meeting, St. Louis, Missouri, December 3, 1982

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Suggestions for Improvement

I think the title of the study is a little misleading in that only a relatively small portion of the study dealt with the impact of the SOEP instructional packet on work values of the students. What was accomplished in the majority of the study could have been accomplished with any group of eleventh grade vocational agriculture students in Iowa, whether or not they had experienced the SOEP instructional packet.

I would like to see a stronger theoretical base developed for the study. It would have been helpful if more information had been provided regarding the SOE instructional packet administered to the experimental group in 1978. What was the content of the packet? What was the duration of the treatment? The researchers stated that "it was theorized that as students put their plans for an SOE program into action and became involved in agricultural occupations, they would develop a positive attitude toward work." While you may believe this to be the case, is there evidence to support your views? Are there other studies which would affirm this opinion? This leads to a related criticism. While I realize that there are space limitations, a review of selected literature would have strengthened the report, especially in establishing the need for this particular study.

A question can be raised of the researchers in the interpretation of the attitude scales in the Work Values Inventory. It is my understanding that the instrument is not designed to measure positive vs. negative values, i.e., the scores are not to be interpreted as good or bad but rather as descriptors of the goals which motivate people to work. If a person has a low score in "Way of Life", for example, that simply means that this particular aspect of work is not valued highly by the respondent. It doesn't mean that this is a negative value.

It would be helpful to know why the Work Values Inventory was selected over other instruments. What were the features of this instrument that made it appealing for this particular study?

The authors mentioned that the schools were visited on site for the data collection. While the 92 percent response rate is certainly commendable, an explanation would be in order. Were the missing students absent on the day of the visit? Were they excluded because their responses were unusable?

The sample consisted of 129 eleventh grade Iowa Vocational Agriculture students and the national norm group used for comparison included 814 eleventh grade boys. In profiling the Iowa respondents, it was stated that "Almost all respondents in both groups were male..." How many is almost? Since the norm group consisted of all males, should the females have been excluded from the sample when comparing with the national norm group?

I have some questions regarding the delayed post-test measure. Would one really expect there to be a statistically significant difference in work values between the experimental group and the control group, given a two year time delay?

I would have been interested in the authors taking a crack at explaining some of the findings which to me seemed a little surprising. For example, I would have expected Iowa vocational agriculture students to score significantly higher on such values as "Way of Life" and "Altruism" than the national norm, but such was not the case. In fact, just the opposite occurred. It was also interesting to note that only one of the scales, "Independence", showed a significant difference when students were grouped according to immediate plans upon completion of high school. Is there a possible explanation for this finding?

While the researchers identified several possibilities for further research in their recommendations, I would like to suggest a couple of others. In addition to conducting research to determine the work values that are developed through various types of SOE programs, it would be helpful to determine how other types of experiences, both school and non-school, impact upon the work values of students. Also, more basic than this, perhaps research should be conducted to determine how work values are developed, and to determine if they change with age and experience.

REPORT II.

THE EFFECTS OF TASK INSTRUCTION SHEETS ON THE PERFORMANCE OF THREE GROUPS OF CLIENTELE STUDYING SHEEP PRODUCTION

Strengths

The authors are to be commended for conducting a very fine study. It is refreshing to observe well designed experimental research in agricultural education. The posttest-only control group design was well conceived and tightly conducted with proper controls being administered throughout the study. The six task evaluation instruments used to evaluate learner performances were pilot-tested, giving evidence of adequate reliability and validity.

Other exemplary features of the research included the inservice training session for the instructors and the use of trained evaluators to evaluate the performance of the sheep clinic participants at each site. The conclusions resulting from the study provide a solid foundation for recommending the use of task instruction sheets and other competency based instructional materials in agricultural education. This study can serve as a good model for similar types of studies that need to be conducted.

Suggestions for Improvement

I feel it is appropriate for me to chide the authors for well exceeding the maximum number of pages specified for papers to be presented at this conference. If this paper were being submitted to a journal which prescribed a maximum of 10 pages, it would not be published unless about forty percent of the material were eliminated.

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In the statement of the problem, the authors theorized that the use of task instruction sheets would augment the performance scores of the clientele studying basic sheep production tasks. Some evidence to support this theory would be in order, such as the identification of related studies which have reported similar findings.

I would suggest a different order in reporting the results of the study. Beginning with the interaction effect detracted somewhat from what I believe to be the more important part of the study - the effect of the task instruction sheets on the performance of the participants. Actually, looking at the effect of interaction is only appropriate when significant main effects are first determined. At any rate, I believe the manuscript would be greatly enhanced by reporting the interaction effect last rather than first.

I was somewhat confused with the number of participants for which scores were reported. I was led to believe that there would be 20 participants in each of the 18 sheep clinics (a total of 360 persons), yet data were reported for only 200 participants.

I was wondering if the researchers had any explanation as to why two of the six task sheets failed to result in significantly higher scores. Was there anything different about the two sheets or the two tasks involved that might explain the results.

I was pleased to see the effort of the researchers at determining the practical difference as well as the statistical significance using the scores for the three clientele groups. I was curious, though, as to why the same thing was not done with the instructional strategy data.

Since there was such a small difference in the scores of the vocational agriculture students using task sheets and those not using task sheets, the researchers may be going beyond the findings by concluding that "task instruction sheets are effective teaching aids for Cooperative Extension Agents, 4-H club lay leaders, and vocational agriculture teachers." The inclusion of vocational agriculture teachers in this statement may be questionable.

REPORT III.

IMPACT OF PROGRAMMATIC SOE INSTRUCTION ON THE SELF-IMAGE OF STUDENTS

Strengths

This study is similar in many ways to the Haynes and Williams study, and possesses many of the same strengths. Strengths deserving of mention include the reporting format, writing style, the sampling technique, the use of on-site visits to collect data, the clear statement of hypotheses, and the use of appropriate statistics - all of which are highly commendable features. Special commendation is due the authors for their efforts to show the parallel between the content and methods emphasized in the SOE packet and factors that influence positive self-image. While the placement of this material might have been more appropriate in the Introduction,

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linking it with the other material related to theory, it is nonetheless a valuable feature of the study.

Suggestions for Improvement

As with the Haynes and Williams study, I suggest that the title of this study is a little misleading in that only a relatively small portion of the study dealt with the impact of programmatic SOE instruction on the self-image of students. I would also raise the same questions regarding the response rate of 94 percent, since the data were collected on-site, and the use of the delayed post-test measure, given a two-year time span since the treatment was administered to the experimental group.

A rationale for the selection of the Barksdale Self-Esteem Evaluation No. 69 would be in order, as would be information regarding norms and the validity and reliability of the instrument. What are the features of the instrument that made it appropriate for use in this study? The researchers did use the data collected to test reliability of the instrument, and they observed a very strong reliability coefficient of .87, although no mention was made of the reliability formula used. Was there any thought given to making any comparisons between the Iowa students in the sample and national norms. Are there comparable age norms or grade norms with which to compare? It was observed that the scores of the students in the sample were "relatively low" when compared to a possible score of 100, yet no mention was made of scores by any norm groups as a basis of comparison.

The terms "self-image and "self-esteem" are used interchangeably throughout the study. Are they really one in the same? Some writers make a clear distinction between the two.

In my opinion, there were one or two questionable interpretations of some of the findings. For example, it was found that students who had SOE programs that featured farm employment away from the home had a significantly higher self-esteem score than students who had not had such experience. The explanation offered was that employment can provide immediate rewards that are highly observable to the student and that such rewards can make individuals feel good about what they are doing and about themselves. The interesting point is that students who were employed in off-farm agribusiness did not score significantly higher than those who had not had such experience. If employment is the thing that makes students feel better about themselves, one would think it would be just as true for those employed in off farm agribusiness as for those employed on a farm. In cases like these, I think it is better to avoid attempting to explain the finding.

IMPACT OF A SUPERVISED OCCUPATIONAL EXPERIENCE INSTRUCTIONAL PACKET ON IOWA VOCATIONAL AGRICULTURE STUDENTS AS MEASURED BY A WORK VALUES INVENTORY

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INTRODUCTION

Students learning through supervised occupational experience (SOE) is one of the cornerstones in vocational education in agriculture. SOE, a learning by doing teaching approach, integrates subject matter with experience in the world of work. In an effort to help beginning vocational agriculture students plan and select SOE programs, an instructional packet (hereafter referred to as "packet" or "SOE packet") was developed at Iowa State University (Williams, 1977). Briers (1978) used a pretest-posttest control group experiment to test the effectiveness of the packet and found that students in experimental schools where teachers used the packet were more knowledgeable of SOE, felt more positive about SOE, and were better prepared to plan their SOE programs than students in control schools. Based on these findings, it was theorized that as students put their plans for an SOE program into action and became involved in agricultural occupations, they would develop a positive attitude toward work. Therefore, it was hypothesized that students who were in the experimental group would have higher work values than students in the control group. It was further hypothesized that vocational agriculture students who were highly involved in learning to perform tasks in occupations would have higher work values than students represented by a national norm group. It was also hypothesized that a relationship existed between work values and student's plans after completion of high school.

OBJECTIVES OF THE STUDY

The primary objective of the study was to determine the effect upon work values of students whose teachers used the SOE packet as compared to those who did not. There were three secondary objectives: (1) to determine if differences existed between mean work values (composite and scale scores) of a selected group of Iowa high school students and a national norm group; (2) to determine if differences existed between the work values of the Iowa students grouped according to plans after high school; and (3) to determine if differences existed between work values of the Iowa students grouped according to occupational plans.

METHODS AND PROCEDURES

This study (Haynes, 1981) was designed to provide a delayed posttest measure for an experiment originally initiated by Briers (1978) to evaluate the effectiveness of a SOE instructional packet developed

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at Iowa State University. Briers' (1978) experiment included 32 Iowa schools randomly selected and assigned to an experimental group (N=16) and a control group (N=16). Included in these two groups were 388 first-year vocational agriculture students.

Two years after the Briers (1978) experiment, 258 of the students were still enrolled in the same school and participating in vocational agriculture. For this study, a fifty percent random sample of these remaining students were selected. Therefore, the sample for this study included 129 third-year (junior) Iowa vocational agriculture students. The national norm group included eleventh grade boys from 26 school systems in 20 states as reported by Super (1970^a).

Two instruments were used in collecting data for the study. A Work Values Inventory developed by Super (1970^b) was used to measure work values. It consisted of fifteen scales and also yielded a composite score. Each scale consisted of three items rated on a five-point continuum, 1=unimportant, 2=little importance, 3=moderately important, 4=important, and 5=very important. Super (1970^a) reported that the fifteen work value scales yielded test-retest reliability coefficients (coefficient alpha) between .74 and .88. Altruism, esthetics, creativity, intellectural stimulation, independence achievement, prestige, management, economic returns, security, surroundings, supervisory relations, associates, variety, and way of life were concepts measured by the fifteen scales.

A questionnaire was developed by the researchers to ascertain descriptive data regarding the respondents. The response framework consisted of multiple choice, dichotomous, and completion type responses.

Students in schools where teachers utilized the SOE packet constituted the experimental group. Students whose teachers did not utilize the SOE instructional packet comprised the control group. For the purpose of this study, students and not schools were used as the experimental units.

The researchers visited the schools involved to administer the instruments to the selected students. Completed instruments were obtained for 119 students, a 92 percent response rate. Of these, 52 were from control schools and 67 were members of the experimental group. Data from the national norm group were obtained from the Work Values Inventory Manual (Super 1970^a).

Percentages were used to determine personal and situational data. The t-test was used to test for differences between groups focusing on the work value scales and the composite score. One-way analysis of variance was used to test for differences among respondent categories and the Scheffé Test was employed to identify differences between all possible pairs of group means.

RESULTS

The findings, conclusions, and recommendations will be closely tied to four hypotheses, following a brief description of the respondents.

The following partial profile is provided for the respondents:

1. Almost all respondents in both groups were male, in their third year of vocational agriculture, and had participated in FFA activities for three years.

2. Slightly over one-half of the students in both groups identified farming as their occupational aspiration. Another 13 percent aspired to enter non-farm agricultural occupations.
3. Twenty-eight percent of the respondents planned to attend a community college or area vocational-technical school, while another 20 percent planned to attend a four-year college or university.

H_{01}: There is no significant difference between mean work values (composite and scales scores) of students whose teachers used the SOE packet as compared to those who did not.

The t-test was used to test for significant difference in composite work value means and means for the 15 work value scales. Results of the sixteen individual t-tests are summarized in Table 1. The tabular t-value with which the calculated t's were compared is 1.98 for 117 degrees of freedom. The small t-values, .15 to 1.04, indicated that the means for the two groups were similar. Thus, the null hypothesis was not rejected. The SOE packet had no effect on students' work values. Since values are developed over time, two years may not have been sufficient time for students to prioritize the qualities they desire in work.

Super (1970[a]) suggested that one type of intepretation of work value scores is that which examines raw scores in order to see the relative emphasis placed by the respondents on each of the scales. However, an examination of the rank order of the scales also showed similarity between the two treatment groups.

When the total sample was considered, the highest means (above 12.0) were observed for the following work value scales: (1) Way of Life, (2) Economic Return, (3) Achievement, (4) Independence, and (5) Supervisory Relations. The scales with the lowest means (below 11.0) for the total group were (1) Security, (2) Esthetics, (3) Management, (4) Associates, (5) Altruism, and (6) Creativity.

Thus, it can be concluded that the following work qualities were valued highly by both groups:

1. Work which permits one to live the kind of life he chooses and be the type of person he wishes to be (Way of Life Scale).
2. Work which pays well and enables one to have the things he/she wants (Economic Return Scale).
3. Work which gives one a feeling of accomplishment in doing a job well (Achievement Scale).
4. Work which permits one to work in his/her own way, as fast or as slowly as he/she wishes (Independence Scale).
5. Work which is carried out under a supervisor who is fair and with whom one can get along (Supervisory Relations Scale). (Super, 1970[a])

The following work qualities were perceived by both groups of students as being of less importance:

1. Work which provides one with certainity of having a job even in hard times (Security Scale).
2. Work which permits one to make beautiful things and to contribute beauty to the world (Esthetic Scale).

Table 1. Rank order, means, standard deviations, and t-values for work values for the total sample and by treatment group.

Work Value Scales	Total Group		Treatment Group Control[a]		Treatment Group Experimental[b]		t-value
	R[c]	Mean S.D.	R[c]	Mean S.D.	R[c]	Mean S.D.	
Composite	--	168.60 21.66	—	167.07 23.24	--	170.57 19.49	.87
Way of Life	1	12.69 2.13	1	12.65 2.29	1	12.75 1.93	.23
Achievement	2	12.30 2.01	2	12.13 2.09	3	12.51 1.89	1.03
Economic Return	3	12.27 2.38	5	12.05 2.46	2	12.51 2.27	1.04
Independence	4	12.19 2.09	3	12.13 2.11	4	12.26 2.07	.34
Supervisory Relations	5	12.05 2.4	4	12.08 2.35	5	12.01 2.55	-.15
Surroundings	6	11.48 2.21	6	11.37 2.21	6	11.63 2.23	.63
Variety	7	11.24 2.38	7	11.17 2.40	8	11.32 2.38	.33
Prestige	8	11.06 2.12	8	10.95 2.09	7	11.21 2.17	.65
Intellectual Stimulation	9	10.89 2.02	9	10.77 2.34	9	11.05 1.53	.75
Creativity	10	10.71 2.20	10	10.55 2.36	10	10.92 1.99	.90
Altruism	11	10.64 2.48	11	10.49 2.56	11	10.84 2.37	.76
Associates	12	10.39 2.39	12	10.22 2.32	12	10.61 2.49	.88
Management	13	9.68 2.13	13	9.59 2.18	13	9.78 2.08	.48
Esthetics	14.5	8.63 2.52	14.5	8.71 2.32	14.5	8.53 2.78	-.37
Security	14.5	8.63 2.52	14.5	8.71 2.32	14.5	8.53 2.78	-.37

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[a] Control = students whose teachers did not use the SOE instructional package (N=52).

[b] Experimental = Students whose teachers used the SOE instructional package (N=.67).

[c] R = Rank order within the group based on means.

3. Work which permits one to plan and lay out work for others to do (Management Scale).
4. Work which brings one into contact with fellow workers whom he/she likes (Associates Scale).
5. Work which enables one to contribute to the welfare of others (Altruism Scale).
6. Work which permits one to invent new things, design new products, or develop new ideas (Creativity Scale) (Super, 1970^{a}).

H_{O2}: There is no significant difference between mean scores on work values scales of Iowa vocational agriculture students and the national norm groups.

The t-test was used to test for significant differences in means for the work value scales. Results of the 15 individual t-tests are summarized in Table 2. The tabular t-value with which the calculated t's were compared is 1.96 for 931 degrees of freedom. Several of the work value scales had significant t-values. They were: (1) Creativity; (2) Supervisory Relations; (3) Way of Life; (4) Security; (5) Associates; (6) Variety; (7) Economic Return; (8) Altruism, and (9) Intellectual Stimulation. Therefore, the null hypothesis was rejected, concluding that Iowa vocational agriculture students differed significantly from the national sample on the above named scales.

Eleventh grade students who comprised the national norm group had significantly higher means than the Iowa group for all of the scales named alone except Variety. Several of the scales where the norm group scored significantly higher were related to material or situational values, indicating that the national norm group value to a greater degree than the Iowa group a job in which the pay is adequate, employment is certain, work is done in a pleasant environment, and supervisors are pleasant and cooperative. These job characteristics may not be descriptive of the work vocational agriculture students in Iowa experience in rural settings.

The sample of Iowa students had a significantly higher mean rating than the norm group for the Variety Scale which embodies self-expression. This work value reflects a pleasure orientation rather than a task orientation which may appropriately describe Iowa students' attitude toward their involvement in agriculture through their SOE programs.

H_{O3}: There is no significant difference between mean work values when students are grouped according to occupational plans upon completion of high school.

One-way analysis of variance was used to test for significant difference in composite work value means and means for the 15 work value scales when the total sample of students was grouped according to plans after high school. When a significant F-value was observed, the Scheffé Test ($P<.10$) was used to identify differences between all possible pairs of group means.

Students who planned to become self-employed immediately after high school had significantly higher ($P<.05$) mean value on the Independence work value scale than the other four groups of students as reported in Table 3. (Because of limited space, data are reported for only work values where significant levels were reached.) Hence, the null

Table 2. Rank order, means, standard deviations, and t-values for work value scores by Iowa students and national norms.

Work Value Scales	Iowa Students[a]		National Norms[b]		t-values
	R[c]	Mean S.D.	R[c]	Mean S.D.	
Way of Life	1	12.69 2.13	1	13.27 1.95	-4.23*
Achievement	2	12.30 2.01	4	12.46 2.00	-1.15
Economic Return	3	12.26 2.38	2	12.86 2.06	-4.25*
Independence	4	12.19 2.09	6	11.93 2.09	1.84
Supervisory Relations	5	12.05 2.43	5	12.44 2.22	-2.65*
Surroundings	6	11.48 2.21	7	11.75 2.19	-1.86
Variety	7	11.24 2.51	13	10.73 2.38	3.37*
Prestige	8	11.06 2.12	10	11.32 2.28	-1.77
Creativity	9	10.71 2.20	11	11.30 2.33	-3.96*
Intellectual Stimulation	10	10.89 2.02	8	11.53 2.13	-4.50*
Altruism	11	10.64 2.48	9	11.42 2.63	-4.94*
Associates	12	10.39 2.39	12	10.80 2.19	-2.82*
Management	13	9.68 2.13	15	9.82 2.38	-.94
Esthetics	14.5	8.63 2.52	14	10.60 2.72	-.18
Security	14.5	8.63 2.52	3	12.80 2.36	-27.48*

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[a] Iowa students = students included in the sample of Iowa vocational agriculture schools (N=119).

[b] National norms = students included in the national sample of eleventh grade boys were from 26 school systems in 20 states (N=814).

[c] Rank order within the group based on means.

*Significant at the .05 level of probability.

Table 3. Means, standards definitions and F-value for Independence work value scales with students grouped according to immediate plans upon completion of higher school (N=113).

Groups	Mean	S.D.	F-Value
1. Students who plan to attend a community college or area vocational school (N=34).	11.52	2.36	2.43* (3>5,2,4,1)[a]
2. Students who plan to attend a four-year college or university (N=24)	12.37	2.88	
3. Students who plan to become self-employed (N=26)	13.07	1.64	
4. Students who plan to get a full-time job (N=20)	11.90	1.88	
5. Others (N=9)	12.77	1.64	

*Significant at the .05 level of probabililty

[a] Results of Scheffé test

hypothesis was rejected with regard to the Independence work value scale. The null hypothesis was not rejected with regard to the composite nor the remaining 14 work value scales. Thus, it was concluded that students who planned to become self-employed valued work which permits one to work in his own way to a greater degree than students who planned to continue their formal education or become employed immediately after high school. It should be recognized that over half of the respondents expressed aspiration to farm. Since farming is somewhat of an independent occupation, this finding was not surprising.

> H_{04}: There is no significant difference between mean work values (composite and scale scores) when students are grouped according to occupational plans.

Analysis of variance and the Scheffé Test were again used in testing this hypothesis. Significant F-values ($P<.01$) were observed for two of the work value scales, Independence and Economic Return. Therefore, the null hypothesis was rejected with regard to these two sales. The null hypothesis was not rejected with regard to the composite nor the remaining 13 work value scales. The data are presented in Table 4 for only the two scales where significant differences were observed among the groups.

Students who planned to work in production agriculture valued work that allows for independent thinking and for learning how and why things work to a greater degree than students who planned to work in off-farm agribusinesses, non-agriculture businesses and students who were undecided about their occupational plans. Super (1970^{a}) indicated that the Independence Scale seems to reflect a pleasure orientation. Thus, students with goals to work in production agriculture may anticipate greater pleasure from their work than their counterparts.

Students who planned to work in non-agricultural jobs valued work which pays well and enables one to have the things he/she wants to a greater degree than students who were undecided about their future or who planned to enter an agricultural occupation. Super (1970^{a}) suggested that Economic Returns represents a type of value often referred to as materialistic, the attachment of importance to tangibles such as wages. This suggests that students planning to enter agricultural occupations may value things about work that are necessarily materialistic in nature.

Based on the findings of this study the following recommendations are presented:

1. Additional research is needed to evaluate the long-term effect of the SOE packet on students.
2. Additional research is needed to determine the qualities of work valued by people working in or preparing for occupations in agriculture.
3. Additional research is needed to determine the work values that are developed through various types of SOE programs.
4. Preservice and inservice teacher education programs should emphasize that work values are being developed by students studying vocational agriculture.

Table 4. Means, standard deviations and F-values for Independence and Economic Return work value scales with students grouped according to occupational plans (N=113).

Groups	Independence Scale			Economic Return Scale		
	Mean	S.D.	F-Value	Mean	S.D.	F-Value
1. Students who planned to work in production agriculture jobs.	12.78	1.94	6.21** (1>3,4,2)[a]	12.00	2.29	2.75** (3>4,1,2)[a]
2. Students who planned to work in off-farm agricultural business jobs	10.71	2.26		11.71	3.21	
3. Students who planned to work in non-agriculture jobs	12.40	1.71		13.50	1.50	
4. Students who were undecided about their occupational plans	11.81	1.75		13.37	1.58	

**Significant at the .01 level of probability

[a] Results of Scheffé Test

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5. Students should be encouraged to consider the qualities they desire in work when setting occupational goals.

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THE EFFECTS OF TASK INSTRUCTION SHEETS ON THE PERFORMANCE OF THREE GROUPS OF CLIENTELE STUDYING SHEEP PRODUCTION

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THE EFFECTS OF TASK INSTRUCTION SHEETS ON THE PERFORMANCE OF THREE GROUPS OF CLIENTELE STUDYING SHEEP PRODUCTION

INTRODUCTION

A nationwide survey of agricultural education curriculum resources revealed that few competency-based instructional materials on sheep production have been written for secondary or post-secondary vocational education programs. A review of the sheep management materials used by the Cooperative Extension Service disclosed that the available competency-based educational materials were deficient in emphasizing performance objectives, resources needed, psychomotor performance, and criterion-referenced measures. The available curriculum materials were broad in scope and did not focus on the competencies clientele are required to possess to gain job entry. In addition, few of the sheep production curriculum materials emphasized psychomotor performance.

A review of relevant literature and research provided a background for the problem being investigated. This background was supplemented and reinforced by conferences and interviews with vocational agriculture teachers, County Cooperative Extension Service Agents, shepherds, 4-H sheep club lay leaders, and various members of the staff in the College of Agriculture, The Pennsylvania State University, who were interested in the problem.

After synthesizing the relevant literature, previous research, conferences and interviews, an indication of the type of research that was needed to enhance both formal and nonformal sheep production education programs emerged.

Statement of the Problem

The purpose of this posttest-only experimental study was to investigate the effects of using competency-based sheep production task instruction sheets in a series of sheep clinics conducted in Pennsylvania. The specific problem investigated was focused on the effect task instruction sheets had on clientele level of psychomotor performance after being taught six basic sheep production tasks.

For clientele to master the performance of basic sheep production tasks, it was theorized that the use of task instruction sheets would augment the performance scores of the clientele studying such tasks. Sabol (1976) identified and verified the required tasks in which high school graduates need to be competent to qualify to enter employment at the mid-management level or below for nine sheep production occupations. These identified tasks became the bases for the development and subsequent field testing of task instruction sheets.

OBJECTIVES

The objectives of the study were as follows:

1. To develop and disseminate a package of sheep production task instruction sheets for Cooperative Extension Agents and vocational agriculture teachers.

2. To determine the effect of interaction between the instructional strategy and participant category treatments on performance.

3. To determine the effect of the instructional strategy treatment on participant performance.

4. To determine the effectiveness of the instructional strategy treatments on three groups of participants.

Hypotheses

The hypotheses tested in the study were stated as null hypotheses (H_o) to facilitate the application of appropriate statistical treatment:

H_{o_1} There is no significant interaction between the instructional strategies and clientele treatment groups as measured by six task evaluation instruments.

H_{o_2} There is no difference in the performance of clientele receiving competency-based task instruction sheets and clientele receiving no task instruction sheets as measured by six task evaluation instruments.

H_{o_3} There is no difference in the performance scores of part-time adult shepherds, 4-H club members, and vocational agriculture students receiving instruction on six sheep production tasks as measured by six task evaluation instruments.

Experimental Design

A posttest-only control group design was adopted for the purpose of this study. This design requires the use of experimental and control groups; however, both the experimental and control groups are considered treatment levels in this study. Thus hereinafter, they will be referred to as treatment levels. Because the clientele were pre-determined through pre-registration, the treatment levels did not have pre-experimental sampling equivalence. The randomization involved selection of counties and assignment of treatment: Task Instruction Sheets and no Task Instruction Sheets.

The design of this study enabled this investigator to assume that the main effects of history, maturation, testing, instrumentation, selection, experimental mortality, and interaction of selection and maturation would not be mistaken for the effect of a treatment since both treatment levels experienced these effects. Sources of external validity, such as interaction of testing, interaction of selection, and reactive effects of the experimental procedures were controlled.

The design was modified into a two by three factorial design which permitted the manipulation of two independent variables simultaneously and the evaluation of the variables effects independently. The factorial design utilized is shown in Figure 1.

In the study, clientele were separated into three Y groups (Y representing type of clientele). Clientele from each Y group were then randomly assigned to one of two treatment groups (X). Posttest data were collected in each condition.

There were six treatment groups in the experiment with three sheep clinics in each group. The independent variable was the type of instructional strategy with two levels, one level having task instruction sheets and the other level not having task instruction sheets. The three clientele groups were used as moderator variables. The dependent variable was the clientele performance scores on each of the six sheep production tasks.

	Part-time Adult Shepherds	4-H Club Members	Vo-Ag Students
Sheep clinics that have Task Instruction Sheets	$R\ X_1\ Y_1\ O_1$	$R\ X_1\ Y_2\ O_2$	$R\ X_1\ Y_3\ O_3$
Sheep clinics that do not have Task Instruction Sheets	$R\ X_2\ Y_1\ O_4$	$R\ X_2\ Y_2\ O_5$	$R\ X_2\ Y_3\ O_6$

R = Random selection
X_1 = Sheep clinics that have task instruction sheets
X_2 = Sheep clinics that do not have task instruction sheets
Y_1 = Part-time adult shepherds
Y_2 = 4-H Club members
Y_3 = Vocational agriculture students
O_{1-6} = Observations

Figure 1. Factorial Design

METHODS AND PROCEDURES

The accessible clientele for this study included: (1) part-time shepherds, (2) 4-H club members, and (3) vocational agriculture students in the Commonwealth of Pennsylvania. Using the Pennsylvania Crop Reporting Service Publication 1978 Crop and Livestock Annual Summary, all counties having less than 500 head of sheep on January 1, 1978 were deleted from the 67 available counties. Forty-three counties representing 93 percent of the total sheep population in Pennsylvania qualified to be included in the study. Eighteen counties were randomly selected and experimental treatments were randomly assigned to each.

A maximum of 20 individuals were permitted to participate at each sheep clinic. The Cooperative Extension Agents announced and advertised the sheep clinics for both the part-time adult shepherds and 4-H club members through their usual methods and channels of communication with such clientele. Part-time adult shepherds and 4-H club members were selected as they pre-registered with the County Extension staff or 4-H sheep club lay leader. Vocational agriculture teachers verbally announced the sheep clinics to their vocational agriculture classes. Students were selected as they pre-registered with the vocational agriculture teacher. When more than 20 people pre-registered, the first 20 were accepted. When there was an overflow of eight or more individuals, a second clinic was arranged. However, no data were collected from the second clinics.

Development of Evaluation Assessment Instruments

The criterion-referenced measures developed as a means for evaluating learner performances were six task evaluation instruments. From the task instructions, important steps were restated in the past tense. Each item was assigned a numerical value. The numerical values were determined by a committee of five professional shepherds. Each committee member assigned a numerical value to each task evaluation item. The values were summed and a mean score was determined for each item. For simplicity purposes, the values were rounded off to the nearest number that could be divided by five. The committee adjusted each task evaluation score to total 100 points.

To determine the feasibility of using these six evaluation instruments for the experiment, the investigator pilot-tested the instruments in three Pennsylvania counties not included in the study. These three counties were randomly selected using a random number table. A county was then randomly assigned to each of the three samples. The investigator had three sheep clinics conducted teaching the identical six sheep production tasks used in the study. The testing situation was identical to that of the experiment. The Kuder-Richardson Reliability coefficients were: .73, .76, .89, .65, .88, and .82 on the six evaluation instruments.

Popham (1973, p. 29) wrote, "...with validity, as with reliability, the results of the procedures are useful if they are positive, but not necessarily devastating if they are negative." Popham (1973, p. 23) went on to write, "...with criterion-referenced evaluation, variability is irrelevant. The meaning of the score is not dependent on the comparison with other scores; it flows directly from the connection between the items and the criterion." Popham emphasized that the criterion-referenced item is guided by the rule that makes sure the item is an accurate reflection of the criterion behavior.

The task evaluation items were written in the past tense from key items found in the task instruction. The nature of the items was consistent with the psychomotor behaviors under consideration. The task evaluation items represented the behaviors delimited by the criterion.

Clientele were evaluated on the basis of how closely their performance approximated the performance called for in the instruction. Therefore, the criterion-referenced measures were validated primarily in terms of the adequacy with which they represented the criterion (Popham, 1973). Evidence found in the pilot tests led the investigator to believe this to be a reliable and valid test.

The final version of the assessment instruments contained a total of 39 psychomotor items. All 39 items were selected and administered to the clientele as a posttest following the experimental treatments.

Sheep Clinics

In the 18 counties assigned to the study, 18 sheep clinics were scheduled and conducted during the months of April, May, and June 1980. The purposes were to teach six basic sheep tasks and to collect data. Each sheep clinic consisting of three phases. Phase one, the instructor explained and demonstrated each of the six sheep production tasks. Phase two, the participating clientele practiced the performance of the six tasks with sheep provided at each sheep clinic. Phase three, each of the clientele performed the six competency-based sheep production tasks before an evaluator who measured the performance of each sheep task by using a criterion-referenced measure.

Identical tasks were taught at each sheep clinic. The six basic sheep production tasks were:

1. Catch sheep by hindflank;
2. Make "instant" sheep halter with baling twine;
3. Determine age of sheep by their teeth;
4. Determine rectal temperature of sheep,
5. Intramuscular injection;
6. Deworm sheep with dose syringe.

A task instruction sheet was developed for each of the above six basic sheep production tasks and was used as a handout at nine of the 18 sheep clinics.

Sheep Clinic Instructors

Instructors for the three samples were composed of County Cooperative Extension Agents, 4-H sheep club lay leaders, and vocational agriculture instructors. These individuals are traditionally responsible for teaching sheep competencies to the defined populations. Instructors were required to have had previous experience, knowledge, and/or training of sheep production practices.

Inservice Session for Instructors

The instructors assigned to the study attended a one-day training session at The Pennsylvania State University. Instructors received directions from the researcher as to how each sheep clinic was to be conducted to insure operational continuity.

The inservice session was composed of two phases. During the first phase directions were given for teaching methods, laboratory practice session, performance evaluation, resources needed, facilities, and scheduling procedures.

The second phase of the inservice session was conducted at The Pennsylvania State University Sheep Center where a model sheep clinic was conducted. All sheep clinic instructors were required to perform the six tasks and were evaluated before an evaluator. The instructors were required to attain a performance score of 85 or greater for each of the six tasks as measured by a criterion-referenced measure.

Ten days after the inservice session, a package was mailed to each sheep clinic instructor. The package contained eleven different items. Instructors who were to use task instruction sheets received the task instruction sheets in addition to the eleven items. Instructions on how to use the sheets were also included in the package. The instructors teaching the sheep clinics without task instruction sheets were not cognizant of the fact that task instruction sheets were being used in half of the 18 sheep clinics.

Evaluation of Performance

Subjects who participated in each sheep clinic performed each of the six competencies before one of the three evaluators who were employed to attend the 18 sheep clinics. The sheep clinics were divided among the three evaluators so each could gather data from both treatment and no special treatment clinics within the three samples. The evaluator determined each subject's performance score according to the criterion-referenced measure that corresponded to the task evaluation on each of the six task instruction sheets.

Data Collection and Analysis

Each task evaluation score was recorded by an evaluator on task score sheets. Evaluators personally delivered the raw data to the researcher. All raw data remained in the custody of the researcher and were destroyed after being keypunched. Only collective data are reported.

The performance scores on the six measurement instruments were transferred to data-process cards for analysis. Statistical computations were made at The Pennsylvania State University Computation Center, using the Statistical Analysis System (SAS). SAS is a computer system for managing data, analyzing it statistically, and writing reports.

The General Linear Model Procedure which computes a complete analysis of variance (ANOVA) was employed to test the differences in group means among sheep clinic treatment levels. When significant differences were found among the means, Duncan's Multiple Range Test for Variance was used to determine which differences between treatments were significant.

FINDINGS

Null Hypothesis One

It was hypothesized that no significant interaction existed between the instructional strategies and clientele treatment groups as measured by six task evaluation instruments. Table 1 presents the assessment of dependent variable by total score.

Table 1. Effects of Instructional Strategies and Clientele Group Treatments on Total Score

	df	Sum of Squares	F	P
Instructional Strategy	1	202925.35	44.39	.0001
Clientele Group	2	187054.41	20.46	.0001
Instructional Strategy and Clientele Group	2	208482.59	22.80	.0001

The results of the ANOVA procedure by level of instructional strategies and clientele group were significant ($f = 22.80$, $p < .0001$), indicating that interaction existed.

Table 2 presented the assessment scores for each task for interaction. The results were significant (task 1, $f = 29.27$, $p < .0001$; task 2, $f = 4.48$, $p < .0125$; task 3, $f = 7.23$, $p < .0009$; task four, $f = 6.08$, $p < .0027$; task 5, $f = 4.17$, $p < .0168$; task 6, $f = 60.46$, $p < .0001$). Interaction existed between instructional strategies and clientele treatment groups.

Table 2. Effects of Instructional Strategies and Clientele Group Treatment on Performance Scores.

Task No.	df	Sum of Squares	F	P
1	2	14007.1	29.27	.0001
2	2	590.2	4.48	.0125
3	2	3076.8	7.23	.0009
4	2	8254.2	6.08	.0027
5	2	1380.8	4.17	.0168
6	2	20707.1	60.46	.0001

Tuckman (1972, p. 267) recommends when "...significant main effects and significant interaction exist, it is useful to plot the results...." Campbell and Stanley (1973, p. 29) in their discussion regarding interaction said, "...in interpreting effects for generalization purposes, we should plot them and examine them in detail." Glass and Stanley (1970, p. 410) said, "Whenever there is a significant interaction, one should plot the means for the various combinations." Figure 5 shows mean scores plotted for each instructional strategy by clientele. It shows no disordinal interaction; however, strong ordinal interaction was evident. According to Glass and Stanley (1970, p. 411), "When the lines do not cross, interaction is said to be 'ordinal'...." They go on to say:

> When interaction is ordinal it makes sense to assume, for example, that when girls score higher than boys on the dependent variable the superiority exists for all reading material. That is, even though interaction exists, it is still meaningful to make a single statement about boys and girls, over-all, without qualification or reference to some other variable.

The null hypothesis for interaction is not rejected; however, since there is no disordinal interaction the main effects were interpreted as suggested by Glass (1970, p. 411).

Null Hypothesis Two

It was hypothesized that no difference existed in the performance scores between clientele who received task instruction sheets and clientele who did not receive task instruction sheets as measured by six task evaluation instruments. Table 3 presents the mean assessment scores for Task #1, "Catching Sheep by Hindflank" by instructional strategy. The results were significant (f = 44.22, p <.0001).

Table 3. Mean Assessment Scores for Task #1, "Catching Sheep by Hindflank" by Level of Treatment.

Instructional Strategy	N	Mean Score	F	P
Task Sheets	114	87.3	44.22	.0001
No Task Sheets	86	72.6		

Clientele who used task instruction sheets for Task #1 scored significantly different than clientele who did not use task instruction sheets.

Table 4 presents the mean assessment scores for Task #2, "Make 'Instant' Sheep Halter with Baling Twine" by instructional strategy. The results were not significant (f = 1.93, p < .1661). Clientele who used task instructional sheets for Task #2 did not score significantly different than clientele who did not use task instruction sheets.

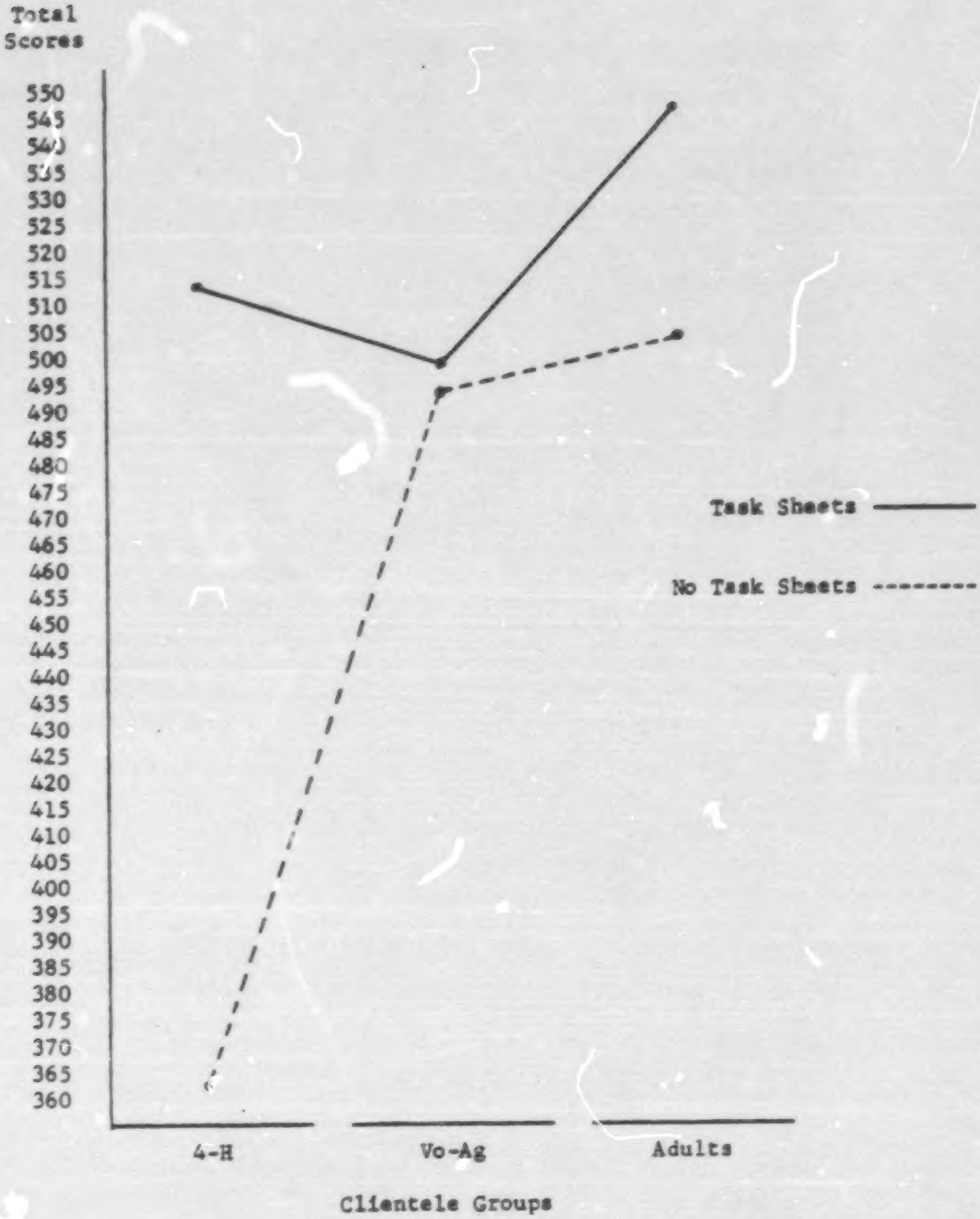

Figure 5. Mean Scores Plotted for each Instructional Strategy by Clientele Group.

Table 4. Mean Assessment Scores for Task #2, "Make 'Instant' Sheep Halter with Baling Twine" by Level of Treatment.

Instructional Strategy	N	Mean Score	F	P
Task Sheets	114	95.6	1.93	.1661
No Task Sheets	86	94.0		

Table 5 presents the mean assessment scores for Task #3, "Determine Age of Sheep by Teeth" by instructional strategy. The results were not significant (f = .03, p < .8592). Clientele who used task instruction sheets for Task #3 did not score significantly different than clientele who did not use task instruction sheets.

Table 5. Mean Assessment Scores for Task #3, "Determine Age of Sheep by Teeth" by Level of Treatment.

Instructional Strategy	N	Mean Score	F	P
Task Sheets	114	83.2	.03	.8592
No Task Sheets	86	82.6		

Table 6 presents the mean assessment scores for Task #4, "Deworm Sheep with Dose Syringe" by instructional strategy. The results were significant (f = 34.78, p < .0001). Clientele who used task instruction sheets for Task #4 scored significantly different than clientele who did not use task instruction sheets.

Table 6. Mean Assessment Scores for Task #4, "Deworm Sheep with Dose Syringe" by Level of Treatment.

Instructional Strategy	N	Mean Score	F	P
Task Sheets	114	75.8	34.78	.0001
No Task Sheets	86	53.8		

Table 7 presents the mean assessment scores for Task #5, "Determine Rectal Temperature of Sheep" by instructional strategy. The results were significant (f = 44.07, p < .0001). Clientele who used task instruction sheets for Task #5 scored significantly different than clientele who did not use task instruction sheets.

Table 7. Mean Assessment Scores for Task #5, "Determine Rectal Temperature of Sheep" by Level of Treatment.

Instructional Strategy	N	Mean Score	F	p
Task Sheets	114	91.1	44.07	.0001
No Task Sheets	86	70.1		

Table 8 presents the mean assessment scores for Task #6, "Intramuscular Injection" by instructional strategy. The results were significant (f = 58.31, p < .0001). Clientele who used task instruction sheets for Task #6 scored significantly different than clientele who did not use task instruction sheets.

Table 8. Mean Assessment Scores for Task #6, "Intramuscular Injection" by Level of Treatment.

Instructional Strategy	N	Mean Score	F	p
Task Sheets	114	84.4	58.31	.0001
No Task Sheets	86	70.1		

Table 1 (p. 7) presents the assessment of dependent variable by total score. The result of the ANOVA procedure by instructional strategy was significant (f = 44.39, p < .0001) indicating that clientele who used task instruction sheets tended to score higher than clientele who did not use task instruction sheets. The null hypothesis for instructional strategy is rejected.

Null Hypothesis Three

It was hypothesized that no difference existed in the performance scores between part-time adult shepherds, 4-H club members, and vocational agriculture students who received instruction on six sheep production tasks as measured by six task evaluation instruments. Table 9 presents the mean assessment scores for Task #1, "Catch Sheep by Hindflank" by clientele group. The results were significant (f = 19.6, p < .0001). Clientele groups differed in performance scores for Task #1.

Table 10 presents the mean assessment scores for Task #2, "Make 'Instant' Sheep Halter with Baling Twine" by clientele groups. The results were significant (f = 9.08, p < .0002). Clientele groups differed in performance scores for Task #2.

Table 9. Mean Assessment Scores for Task #1, "Catch Sheep by Hindflank" by Clientele Group.

Clientele Group	N	Mean Score*	F	p
Part-time Adult Shepherds	53	87.6 A		
4-H Club Members	78	73.4 B	19.6	.0001
Vocational Agriculture Students	69	84.4 A		

*Mean scores followed by the same letter are not significantly different according to Duncan's Multiple Range Test for Variation.

Table 10. Mean Assessment Scores for Task #2, "Make 'Instant' Sheep Halter with Baling Twine" by Clientele Group.

Clientele Group	N	Mean Score*	F	p
Part-time Adult Shepherds	53	98.5 A		
4-H Club Members	78	92.5 B	9.08	.0002
Vocational Agriculture Students	69	94.8 B		

*Mean scores followed by the same letter are not significantly different according to Duncan's Multiple Range Test for Variation.

Table 11 presents the mean assessment scores for Task #3, "Determine Age of Sheep by Teeth" by clientele group. The results were significant (f = 4.94, p < .008). Clientele groups differed in performance scores for Task #3.

Table 11. Mean Assessment Scores for Task #3, "Determine Age of Sheep by Teeth" by Clientele Group.

Clientele Group	N	Mean Score*	F	p
Part-time Adult Shepherds	53	86.4 A		
4-H Club Members	78	79.0 B	4.94	.008
Vocational Agriculture Students	69	84.9 A		

*Mean scores followed by the same letter are not significantly different according to Duncan's Multiple Range Test for Variation.

Table 12 presents the mean assessment scores for Task #4, "Deworm Sheep with Dose Syringe" by clientele group. The results were significant (f = 12.38, p < .0001). Clientele groups differed in performance scores for Task #4.

Table 12. Mean Assessment Scores for Task #4, "Deworm Sheep with Dose Syringe" by Clientele Group.

Clientele Group	N	Mean Score*	F	p
Part-time Adult Shepherds	53	77.9 A		
4-H Club Members	78	57.1 C	12.38	.0001
Vocational Agriculture Students	69	67.8 B		

*Mean scores followed by the same letter are not significantly different according to Duncan's Multiple Range Test for Variation.

Table 13 presents the mean assessment scores for Task #5, "Determine Rectal Temperature of Sheep" by clientele group. The results were significant (f = 9.37, p < .0001). Clientele groups differed in performance scores for Task #5.

Table 13. Mean Assessment Scores for Task #5, "Determine Rectal Temperature of Sheep" by Clientele Group.

Clientele Group	N	Mean Score*	F	p
Part-time Adult Shepherds	53	92.0 A		
4-H Club Members	78	85.1 B	9.37	.0001
Vocational Agriculture Students	69	82.1 B		

*Mean Scores followed by the same letter are not significantly different according to Duncan's Multiple Range Test for Variation.

Table 14 presents the mean assessment scores for Task #6, "Intramuscular Injection" by clientele group. The results were significant (f = 28.26, p < .0001). Clientele groups differed in performance scores for Task #6.

Table 14. Mean Assessment Scores for Task #6, "Intramuscular Injection" by Clientele Group.

Clientele Group	N	Mean Score*	F	p
Part-time Adult Shepherds	53	84.3 A		
4-H Club Members	78	70.5 B	28.26	.0001
Vocational Agriculture Students	69	82.4 A		

*Mean scores followed by the same letter are not significantly different according to Duncan's Multiple Range Test for Variation.

The Duncan's Multiple Range Test for Variation post-hoc test showed significantly greater mean scores for the part-time adult shepherds and vocational agriculture students. The part-time adult shepherds consistently scored higher on all six tasks than did the two youth clientele groups.

The Duncan's Multiple Range Test for Variation post-hoc test showed significantly greater mean scores for the vocational agriculture students on four competency-based tasks than did the 4-H club members.

Table 1 (p. 7) presents the assessment of dependent variable by total score. The results by clientele groups were significant ($f = 20.46$, $p < .0001$). Part-time adult shepherds, 4-H club members and vocational agriculture students differed in performance scores as measured by six task evaluation instruments. The null hypothesis for clientele group was rejected.

The scores were further analyzed by calculating the correlation coefficient squared (coefficient of determination). Table 15 discloses the assessment scores for six tasks by the proportion of variation in Y accounted for by X as indicated by the correlation coefficient squared. Interpretation of data is dependent largely on the result of significance tests.

When one considers the importance of sample size in determining statistical significance, Oliver (1981, p. 13) asks the question, "Is there a problem in equating statistical significance and practical importance?" Hayes (1963, p. 326) noted, "Virtually any study can be made to show significant results if one uses enough subjects, regardless of how nonsensical the content may be." Hinkle (1979, p. 192) said:

> The observant reader may have noted that a sufficiently large sample size will lead to the rejection of any null hypothesis based upon a fixed difference between the hypothesized parameter and the observed sample statistic. On the other hand, a researcher may not reject a null hypothesis even though there is a seemingly large difference between the parameter and the corresponding statistic. It is possible that the sample size is then too small.

There appears to be no general answer as to how large the percentage should be to indicate practical difference. Cohen (1977, pp. 79-80) suggests the correlation coefficient squared be ranked into three classifications with the following percentages to indicate effect size for practical difference:

Small effect size: $r^2 = .01$
Medium effect size: $r^2 = .09$
Large effect size: $r^2 = .25$

Table 15. Assessment Scores for Six Tasks by the Proportion of Variance in Y Accounted for by X and Correlation Coefficient Squared.

Skill Number	Est. W^{2*}	r^{2**}	Effect***
#1	.42	.422560	Large
#2	.12	.130236	Medium
#3	.10	.111572	Medium
#4	.26	.269876	Medium
#5	.26	.268364	Large
#6	.54	.548585	Large

*Est^2 = The proportion of variance in Y accounted for by X (Hays, 1963, p. 325).

**r^2 = Correlation coefficient squared.

***Effect = Small effect size: $r^2 = .01$
Medium effect size: $r^2 = .09$
Large effect size: $r^2 = .25$ (pp. 79-80)
(Cohen, 1977)

The parameters of this experiment for clientele groups were limited to six groups for each of the three samples, a total of 200 clientele in the 18 groups. The correlation coefficient squared for the clientele performance scores from the ANOVA procedure resulted in a medium to high practical difference for each of the six competency-based tasks according to Cohen's classification. Therefore, there was both a practical difference and a significant difference that resulted from the experiment.

CONCLUSIONS

The conclusions derived from this study are presented in the same sequence as the hypotheses are cited on p. 3.

H_{o_1} Null hypothesis one was not rejected. There was significant ordinal interaction between the instructional strategies and clientele treatment groups as measured by six task evaluation instruments. However, since there was no disordinal interaction, the main effects were interpreted as suggested by Glass (1970, p. 411).

H_{o_2} Null hypothesis two was rejected. There was a significant difference in the performance scores between clientele who received task instruction sheets and clientele who did not receive task instruction sheets. The performance scores of clientele who received task instruction sheets were greater. Task instruction sheets did augment the performance scores as theorized. This finding opens a new perspective on the possible role of task instruction sheets as a teaching aid for vocational agriculture teachers and Cooperative Extension agents.

H_{o_3} Null hypothesis three was rejected. There was a significant difference in the mean performance scores between part-time adult shepherds, 4-H club members and vocational agriculture students. the part-time adult shepherds' mean performance scores were greater than 4-H club members and vocational agriculture students. It was concluded that adults had higher performance scores than the two youth groups. The mean performance scores of the vocational agriculture students were greater than those of the 4-H club members.

The principal conclusion of this investigation was that the task instruction sheets were effective. Clientele who were taught by using sheep production task instruction sheets attained greater mean performance scores on the six competency-based sheep production tasks assigned to the study as measured by six criterion-referenced measures than did those who were not taught by using task instruction sheets. The results supported the belief that competency-based task instruction sheets would augment the performance of competency-based tasks. Task instruction sheets are effective teaching aids for Cooperative Extension agents, 4-H club lay leaders, and vocational agriculture teachers.

RECOMMENDATIONS

Based upon the experiences obtained in developing a package of task instruction sheets and conducting this study, the following recommendations are offered for further consideration:

1. That task instruction sheets for other agricultural domains be developed, disseminated, implemented, and evaluated in both formal and informal agricultural education programs.

2. That agricultural educators and subject matter specialists continue to work together in developing competency-based instruction materials.

3. That similar investigations be conducted using competency-based task instruction sheets in conjunction with competency-based teaching strategies.

4. That Cooperative Extension agents, 4-H club lay leaders, and vocational agriculture teachers be encouraged to employ teaching strategies that utilize local community resources.

5. That similar investigations be conducted to determine the effect of interaction between instructional strategies and clientele treatment groups.

6. That a set of color photographic slides be developed describing each step as presented in the task instruction for each task sheet.

7. That similar investigations be conducted to determine the effect of the competency-based instructional strategy on adult and youth clientele.

Educational Importance of Study

Task Instruction Sheets are effective teaching aids for Cooperative Extension Agents, 4-H Club lay leaders, and Vocational Agriculture Teachers. Task Instruction Sheets augment the clientele performance scores according to the results of this study. This finding opens a new perspective on the role of competency-based Task Instruction Sheets as a teaching aid for both formal and non-formal agriculture education programs.

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IMPACT OF PROGRAMMATIC SOE INSTRUCTION ON THE SELF-IMAGE OF STUDENTS

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INTRODUCTION

Feelings about oneself are important in career development. Havighurst (1953) emphasized that self is a force that helps determine the success of an individual through developmental tasks. Self-image or self-esteem is the evaluation that people make with regard to themselves. Purkey (1970) suggested that educational methods that encompass the following factors influence positive self-image development: (1) challenge, (2) freedom, (3) respect, (4) warmth, (5) control, and (6) success. Carefully planned and implemented SOE programs have the potential to include all six of these factors, thus producing positive self-images in vocational agriculture students.

In an effort to provide instructional materials for teachers to use in providing programmatic SOE instruction for beginning vocational agriculture students, a SOE packet was developed at Iowa State University (Williams, 1977). Briers (1978) used a pretest posttest control group experiment to test the effectiveness of the packet and found that students in experimental schools where teachers used the packet were more knowledgeable of SOE, felt more positive about SOE, and were better prepared to plan their SOE programs than students in control schools. Based on these findings and an awareness of self-image principles, it was theorized that as students put their plans for SOE program into action and became involved in performing tasks in agricultural occupations, they would develop positive self-images. Therefore, it was hypothesized that students who were in the experimental group would have higher self-images than students in the control group. It was further hypothesized that a relationship existed between self-image and type of student SOE program participation. A relationship between students' self-image and students' plans after completion of high school was also hypothesized.

OBJECTIVES OF THE STUDY

The primary objective of the study was to determine the effect upon self-image of students whose teachers used the programmatic SOE instruction (SOE packet) as compared to those who did not. There were three secondary objectives: (1) to determine if differences existed between mean self-esteem scores of student grouped according

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to type of SOE participation; (2) to determine if differences existed between the self-esteem scores of the students grouped according to plans after high school; and (3) to determine if differences existed between self-esteem scores of the students grouped according to occupational plans.

METHODS AND PROCEDURES

This study (Morris, 1981) was designed to provide a delayed post-test measure for an experiment originally initiated by Briers (1978) to evaluate the effectiveness of a SOE instructional packet developed at Iowa State University. Briers' (1978) experiment in-included 32 Iowa schools randomly selected and assigned to an experimental group (N=16) and a control group (N=16). Included in these two groups were 388 first-year vocational agriculture students.

Two years after the Briers (1978) experiment, 258 of the students were still enrolled in the same school and participating in vocational agriculture. For this study, a fifty percent random sample of these remaining students were selected. Therefore, the sample for this study included 129 third-year (junior) Iowa vocational agriculture students.

Two instruments were used in collecting data for the study. The Barksdale Self-Esteem Evaluation No. 69 (Barksdale, 1975) was used to measure how students felt toward themselves (self-esteem or self-image). This instrument included 25 items and was designed to yield a composite self-esteem score. Students were instructed to rate each item on a five-point continuum, 0=not at all true for me, 1=somewhat true or true only part of the time, 2=failry true or true about half the time, 3=mainly true or true most of the time, and 4=true all the time. Examples of items constituting this instrument are: (1) "I am at ease with strangers and make friends easily;" (2) "I feel good about others' good luck and winning;" and (3) I do not blame others for my problems and mistakes." The data collected in this study were used to test reliability of the instrument. A reliability coefficient of .87 was observed.

A questionnaire was developed by the researchers to ascertain descriptive data regarding the respondents. The response framework consisted of multiple choice, dichotomous, and completion type items.

Students in schools where teachers utilized the SOE packet constituted the experimental group. Students whose teachers did not utilize the SOE instructional packet comprised the control group. For the purpose of this study, students and not schools were used as the experimental units.

The researchers visited the schools involved to administer the instruments to the selected students. Completed instruments were obtained for 121 students, a 94 percent response rate. Of these, 55 were from control schools and 66 were members of the experimental group.

Percentages were used to analyze personal and situational data. The t-test was used to test for differences between two groups focusing on the composite self-esteem score. One-way analysis of variance was used to test for differences among respondent categories and the Scheffé Test was employed to identify differences between all possible pairs of group means.

RESULTS

The findings, conclusions, and recommendations will be closely tied to four hypotheses, following a brief description of the respondents.

The following partial profile is provided for the respondents:

1. Almost all respondents in both groups were male, in their third year of vocational agriculture, and had participated in FFA activities for three years.
2. A majority of the students aspired to enter an agricultural occupation, including forty-five percent who planned to enter farming.
3. One-third of the respondents planned to attend a community college of area vocational-technical school, while another 18 percent planned to attend a four-year college or university upon graduation from high school.
4. Almost all (91 percent) of the respondents had conducted an agricultural production ownership type of SOE while enrolled in vocational agriculture. A little less (82 percent) indicated that agricultural production was their primary type of SOE. Thirteen percent identified farm employment as their primary SOE program.

H_{01}: There is no significant difference between mean self-esteem scores of students whose teachers used the SOE packet as compared to those who did not.

The t-test was used to test for significant difference in self-esteem means. Results of the t-test is reported in Table 1. At the .05 level, the tabular t-value with which the calculated t's were compared was 1.98 for 119 degrees of freedom. The t-value was larger than the tabular t-value, indicating a significant difference between the two means. Thus, the null hypothesis was rejected. The students who were in schools where programmatic SOE instruction was provided had a higher self-esteem mean value (59.13) than students in the schools where the materials were not used (mean=59.13).

Table 1. Means, standard deviations, and t-values for self-esteem scores by treatment group.

Treatment Group	Number	Mean	S.D.	t-value
Experimental	66	59.13	12.78	2.35*
Control	55	53.47	13.63	
Total	121	56.56	13.48	

*Significant at the .05 level.

The appropriate question now is, what was there about the treatment (SOE packet) that made the difference? The SOE instructional packet provided teachers with a systematic method of teaching beginning vocational agriculture students to select and plan their SOE programs. SOE program development is a progress that involves a number of steps. Some of these steps, e.g., "identifying opportunities" and "setting goals," are repeated annually or more frequently.

The following parallel between the content and methods emphasized in the SOE packet and factors that influence positive self-image development may help explain the effect observed.

Content/Method of SOE Packet	Positive Self-Image Development Concept
1. Setting SOE goals	1. Providing a challenge
2. Providing student-adult interaction through SOE	2. Receiving warmth and security
3. Identifying opportunities for SOE programs	3. Experiencing freedom to choose
4. Learning under supervision through SOE	4. Receiving respect from others
5. Selected SOE program	5. Feeling in control
6. Planning SOE activities	6. Identifying success indicators
7. Receiving recognition for SOE program achievement	7. Recognizing self-worth.
8. Setting and reaching SOE goals	8. Evaluating self-achievement
9. Evaluating SOE program by teacher (Williams, 1977) .	9. Receiving constructive teacher criticism (Kash and Borich, 1978; Purkey, 1970)

Barksdale (1975) suggested that the total self-esteem score can be considered as an index on a scale from 0-100. The scores reported in Table 1 (59.13 and 53.47) were relatively low when compared to a possible score of 100. However, self-esteem scores of adolescents are expected to be considerable lower than those of adults. Horrocks and Jackson's (1972) theory of self-esteem development indicated that self-esteem is high during the early years, first ten years, then decreases in the adolescent stage and increases again at adulthood.

> H_{02}: There is no significant difference between mean self-esteem scores of students grouped according to whether or not they had participated in various types of SOE programs.

The t-test was used to test for significant differences in mean self-esteem scores between students who had participated in selected types of SOE programs compared to those who had not. The means, standard deviations, and t values for four separate t-tests are reported in Table 2. The tabular T-value with which the calculated ts were compared is 1.98 with 118 degrees of freedom. The t-values for the first two types of SOE were found to be significant at the .05 level. Therefore, the null hypothesis was rejected with regard to animal/crop type SOE and for working on a farm other than home farm.

Table 2. Means, standard deviations, and t-values for self-esteem score of students according to whether or not they had participated in various types of SOE programs.

SOE Type	Group 1[a]		Group 2[b]		T-Value
	Mean S.D.	N	Mean S.D.	N	
	Yes		No		
(a) Animal/Crops SOE programs	55.95 13.51	110	62.20 11.80	10	1.996*
(b) Working on farm other than home	58.93 12.63	54	54.47 13.84	66	3.328*
(c) Working in off-farm agribusiness	57.20 15.62	15	56.37 13.18	105	0.049
(d) Working with school based SOE programs	55.83 12.62	23	56.63 13.69	97	0.066

[a] Group 1 = Students that participated in specific type of SOE programs.

[b] Group 2 = Students that did not participate in specific type of SOE programs.

*Significant at the .05 level.

Students who had participated in animal/crop SOE programs scored significantly lower than those who had not had such experience. This finding may be partially explained by the amount of responsibility associated with ownership SOE programs, especially in the early stages. Rewards from animal/crop ownership may be more long-term in nature.

Students who had SOE programs that featured farm employment away from the home had higher self-esteem than students who had not had such experience. Employment can provide immediate rewards that are highly observable to the student. Such rewards can make individuals feel good about what they are doing and about themselves.

H_{03}: There is no significant difference between the mean self-esteem scores of students grouped according to their past high school plans.

One-way analysis of variance and the Scheefė Test were used in testing this hypothesis. Table 3 reveals the means, standard deviations, and F-values when students were grouped according to past high school plans. The calculated F-value of 3.06 was significant at the .05 level. Therefore, the null hypothesis was rejected. The Scheefė Test revealed that students who had plans other than to attend a community college or four-year college, get a job or become self-employed had significantly higher mean self-esteem scores than those who had no specific educational nor job plans. Many of the students in the "other" group were undecided about post high school plans which may account for the higher self-esteem score. This finding concurs with self-esteem theory. Horrocks and Jackson (1972) reported that after adolescents make an occupational and/or educational decision they must decide whether they are "good enough to do what must be done to succeed" in the selected area. Such decisions may be "literally earthshaking in their consequences" to an individual, resulting in more insecurity, and thus lower self-esteem.

Table 3. Self-esteem score means, standard deviations, and F-value by post high school plans of students (N=119).

Group	Number of Observations	Self-Esteem Scores Mean	S.D.	F-value
1. Attend community college	40	56.55	12.44	3.06*
2. Attend 4-year college	22	56.77	12.59	(5<2,1,3,4)
3. Become self-employed	21	56.00	12.22	
4. Get a job	20	50.30	15.12	
5. Other (Including undecided)	16	65.44	12.56	

*Significant at the .05 level.

H_{04}: There is no significant difference between the mean self-esteem scores of students grouped according to their occupational plans.

This hypothesis was tested with the one-way analysis of variance with four classifications for students' occupational plans: (1) students who planned to work in production agriculture, (2) students who planned to work in sales and services, (3) students who planned to work in agricultural mechanics and (4) students who were undecided. The means, standard deviations, and F-value for this hypothesis are presented in Table 4. The calculated F-value of 0.66 was not significant at the .05 level. Therefore, the null hypothesis was not rejected.

Table 4. Self-esteem score means, standard deviations, and F-value by occupational plans of students (N=121).

Group	Number of Observations	Self-Esteem Score Mean	S.D.	F-value
Production Agriculture	53	55.51	12.92	0.66
Sales and Services	22	54.91	11.12	
Agricultural Mechanics	24	59.63	15.15	
Undecided	22	57.41	14.96	

Common background and experiences of the respondents may account for the similarity in self-esteem scores. Krumboltz (1979) asserted that individuals' past learning experiences influence their occupational decision making. Therefore, the decisions that were made on occupational plans may have reflected students previous agricultural experiences which contributed to levels of self-esteem that were not significantly different.

Based on the finding of this study, the following recommendations are presented:

1. Positive self-image development in students should be emphasized in teaching vocational agriculture.
2. The use of programmatic SOE instructions for beginning vocational agriculture students should be emphasized in preservice and inservice education for vocational agriculture teachers.
3. Additional research is needed to determine how different types of SOE programs effect students' self-esteem.
4. Vocational agriculture students who have made educational and occupational plans need help in evaluating their potential to reach their goals.
5. Vocational agriculture instructional materials should feature content and methods that would support positive self-image development in students.
6. Evaluation of the effect of instructional materials on vocational agriculture students should be included in the developmental process.

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CRITIQUE OF SOEP RESEARCH PAPERS
NINTH ANNUAL NATIONAL AGRICULTURAL EDUCATION RESEARCH MEETING

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INTRODUCTION

When one is asked to assume the role of a discussant at a research conference such as this one, several questions come to mind. What are the expectancies of the researchers who are presenting papers? What do conference participants expect to be accomplished during a critique of the research that has been presented? What contribution can this presentation have for the research conference? With these questions in mind, I proceeded with my assigned task.

I trust that my comments this afternoon will provide a critical appraisal of the papers presented and that this critique will be viewed from the perspective of a colleague responsible for discussing the relative merits and shortcomings of each respective research paper. My remarks are based on my review of the manuscripts provided to me prior to this conference. To some degree I consider this a limitation because it precluded the oral description just reported and also any interchange with the researchers.

CRITIQUES

Factors Associated with the Status of Supervised Occupational Experience Programs in Utah Vocational Agriculture Programs

My specific comments regarding this research paper are as follows:

The review of literature did a very good job in developing the problem and establishing the need for the study. In addition, the researchers are to be commended for developing an excellent research design for this study.

It is commendable that the instruments used in this study were developed through the efforts of a Regional Supervised Occupational Experience Program Committee. This type of collaborative effort, on a regional basis, adds validity to instrument development. It is also commendable that the instruments developed were validated and then subjected to a determination of reliability using a test-retest procedure. However, it is of concern to me that the questionnaires then underwent local adjustments after the validity and reliability determinations were conducted. I am specifically concerned about instrument reliability because over 25 percent of the questions on teacher questionnaires were modified from a "yes-no" response to "percentage categories" in order to "sensitize the response." Such modifications could substantially alter the reliability coefficients that were reported.

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The population for the study consisted of 51 Utah vocational agriculture programs. From this population, 20 schools offering vocational agriculture were randomly selected representing approximately 39 percent of all vocational agriculture programs in Utah. The question that I raise regarding this procedure is: How did the researchers decide that 20 schools should be sampled? Was an appropriate table for determining sample size such as the one developed by Krejuie and Morgan (1970) consulted. If not, then on what basis did the researchers decide to sample 20 schools?

The researchers are to be commended because all questionnaires were personally delivered and picked up from each of the schools in the study thus insuring a 100 percent return, a phenomenon reached seldomly in educational research.

I would recommend that in the result section of the paper, the findings be divided by the major objectives of the study. Doing so would allow the reader to more easily relate the finding to the objectives of the study.

The researchers are to be commended on the statistical procedures used in this study. Once variables were found to be significant they were further analyzed using discriminant analysis to determine the combined ability of the significant variables to discriminate between programs with 75 percent or more students having supervised occupational experience programs and those with less than 50 percent of the students having supervised occupational experience programs. This same procedure was used to determine the ability of significant variables to discriminate between students with supervised occupational experience programs and those without.

The conclusions were very appropriate and supported by the findings. However, in the section titled Implications, it appears to me that the authors went past what the findings would lead one to imply in one instance. They asked the question, "Should teachers follow traditional vocational practices and work hard with those students whose need is greatest, who are more likely to be candidates for jobs requiring "less than a baccalaureate degree," or should they maximize the efficient expenditure of teacher time by working with the good students from agricultural environments." I do not believe that the data collected in this study would lead to this implication.

Finally, the authors are to be complimented for a well written paper.

Attitudes of North Dakota School Administrators and Vocational Agriculture Instructors Toward Supervised Occupational Experience Programs

The following specific comments are provided regarding my reactions to this paper:

First I would like to compliment the authors for combining two different studies into one paper for the purpose of further clarifying attitudes of administrators and teachers regarding the supervised occupational experience program in North Dakota. Such an effort expands on the original purposes of the two studies and gives further insight into the areas investigated.

The authors established a need to conduct the study; however, I believe there is additional literature regarding supervised occupational experience programs that would strengthen the argument for the need to study this particular problem.

Since the entire population of school administrators and secondary vocational agriculture teachers was used, I question with whom the questionnaire was pilot-tested. It is usually considered inappropriate to pilot-test a questionnaire with a group who will ultimately respond to it.

The authors indicated that responses from early and late respondents did not appear to differ substantially; however, they gave no indication of how the analysis was conducted to reach this determination, nor why it was done. Addressing this issue would be helpful.

I also raise this question, why were inferential statistics used to determine where significant differences existed since population rather than sample data were reported?

It was interesting to note on Table 2 that only one statement received a mean rating of 4.0 or greater thus indicating agreement. It would be interesting to see the differences that the various administrative groups placed on these particular items. For example, did superintendents, vocational directors, and principals see these areas congruently or did they see them differently? I would recommend that this particular question be examined.

I was particularly pleased with your first recommendation regarding better communication with administrators. It appears to me that if we are going to make substantial progress toward re-emphasizing supervised occupational experience programs that we must convince those with whom we work that supervised occupational experience programs are an integral part of our program and require support.

Student Benefits from School Farm Activities as Perceived by Administrators and Instructors

My specific comments regarding this research paper are as follows:

The introduction clearly establishes a need to conduct the study and the objectives were well conceived and appropriate. I am certain that a rationale existed for selecting the states of Iowa, Kansas, Missouri, and Nebraska, yet none was described. It would be helpful to know the reason while reading the paper.

Thirdly, what was the rationale and procedure for determining the number of departments selected for the sample? In Iowa, for example, 51 schools were identified as having school farms and 26 schools were selected as the selected sample. Whereas, in Kansas 12 schools were identified and 12 were identified in the selected sample. Some rationale for this selection process should be provided.

No mention was made of follow-up procedures used to insure maximum returns in both the preliminary survey and the actual survey. If follow-up procedures were used, they should be mentioned.

The paper made no mention of procedures used to develop or field test the instrument. In addition, no attempt was made to address the issue of instrument validity and instrument reliability. This is an important part of a research study and I would like to see it addressed.

The findings of the research were well reported and easily related to the objectives of the study. Further, the paper was well written.

It appears to me that additional statistical treatment of some of the data would be appropriate. For example, a review of the means and standard deviations relative to objective 4 would lead me to believe that there was congruence among these two groups. However, an appropriate statistical technique, such as the t-test, would provide additional insight relative to this question.

Finally, Recommendation Two states alternate ways of managing vocational agriculture school farms should be investigated. While I believe this is a true statement, I did not see data relative to this question in the findings and thus I question the reasons that the investigators indicated that this was something that needed to be done in the future.

SUMMARY

In summary, I would like to make the following general statements:

First, I would like to compliment each of the researchers for contributing knowledge to the area of supervised occupational experiences. This area has received attention in the literature and in research but it needs to continually be studied because of its importance to agricultural education.

Further, as I reviewed the papers, it was interesting to note that while several studies and articles were cited, none were in common. Therefore, I believe there is a broad body of knowledge about the supervised occupational experience program that should be assimilated. Thus, I would suggest that an effort be made to conduct a thorough review of the literature regarding the supervised occupational experience program as a means of documenting what is currently known about this area.

Finally, I would like to suggest that we further explore this area with the objective of determining innovative methods for implementing supervised occupational experiences and to compare those methods with existing methods. This should be a very fruitful area for investigation, because the research reported today, indicated that supervised occupational experience programs need to be strengthened, they need to be more creative especially in unique situations, and that SOE remains as an essential programmatic component of vocational agriculture.

FACTORS ASSOCIATED WITH
THE STATUS OF
SUPERVISED OCCUPATIONAL EXPERIENCE PROGRAMS
IN UTAH VOCATIONAL AGRICULTURE PROGRAMS

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INTRODUCTION/NEED FOR THE STUDY

Vocational agriculture programs are vocational to the extent that they provide students with opportunities to learn and develop knowledge and skills necessary to succeed in an agricultural career.

A well-planned and conducted supervised occupational experience program (SOEP) offers the vocational agriculture student an opportunity to apply classroom theory, make practical decisions (Binkley and Hammonds, 1976), and to develop appropriate interpersonal skills.

As early as 1940, the importance of learning through experience was recognized:

> More and more, teachers and others are recognizing that instruction in agriculture becomes genuinely vocational to the degree that experiences are provided in the types of thought and action which lead to the development of abilities needed for success (Educational Objectives of Vocational Agriculture, p. 2).

In a study of the relationship between the quality of supervised occupational experience programs and the achievement of students in vocational agriculture, Morton (1978) emphasized the importance of quality supervised occupational experience programs to the successful educational preparation of students for a career in agriculture. He stressed the need for more in-depth research concerning learning by doing. Binkley and Hammonds (1970), Briers (1978), Harris (1980), Vaughn and Wagley (1980) and Williams (1978) are among others who have indicated that experiential learning is an essential component of vocational education.

With the recognized importance of supervised occupational experience programs in the educational process, and the apparent fact that supervised occupational experience has so much to offer in making high school vocational agriculture programs valid and effective, it would seem that teachers would be utilizing these programs to their fullest extent. This does not, however, appear to be the case. One recent study of high school vocational agriculture graduates in the south (Iverson and Brown, 1979) found that nearly two-thirds had failed to have occupational experience programs for the three years they were in vocational agriculture. Iverson and Brown recommended that individuals who develop and implement vocational agriculture/agribusiness programs should place high priority on strategies which will enable and encourage a higher percentage of students to benefit from a supervised occupational experience program each year they are enrolled in vocational agriculture.

Williams (1978) noted that some students in vocational agriculture classes were not receiving adequate assistance in regard to experiential learning. Vaughn (1980) brought out the concerns of state supervisors in agricultural education in regard to strengthening occupational experience programs. Seefeldt, as quoted by Harris (1980), charged that more realistic and meaningful ways need to be developed to provide all students with occupational experience programs. McMillion and Auville (1976) claimed that occupational experience programs of students studying agriculture in the high schools of Virginia have declined not only in total numbers, but also in scope of individual programs.

Agricultural educators in the Western Region considered these problems with supervised occupational experience programs significant enough to warrant considerable effort in putting together a region-wide study to determine the status of such programs in the Western Region. This study is a part of that effort and may be followed by future studies dealing with the quality of supervised occupational experience programs.

OBJECTIVES

The major purpose of the study was to determine the current status of supervised occupational experience programs in Utah vocational agriculture programs. The specific objectives of the study were to:

1. Identify the number of students in Utah vocational agriculture programs who had supervised occupational experience programs.
2. Identify the number of Utah vocational agriculture programs in which more than 75% of the students had a supervised occupational experience program.
3. Identify factors which are associated with vocational agriculture programs having greater than 75% of the students with supervised occupational experience programs.
4. Identify factors which are associated with those students who have supervised occupational experience programs.

METHODS AND PROCEDURES

Data were collected through the use of two questionnaires: 1) a teacher questionnaire and 2) a student questionnaire. These instruments were developed through efforts of a Regional Supervised Occupational Experience Program Committee. A group of agricultural educators from the Western Region reviewed the instruments and validated the contents in terms of the objectives of the study. Under direction of Dr. Paul Vaughn at New Mexico State University, a coefficient of reliability was determined for each item on both instruments using a test-retest procedure. Both instruments were deemed reliable with coefficients ranging from .63 to 1.0. Only two items of 41 fell below .70 and the large majority of the items on the instruments were above .90. The questionnaires were then sent to each participating university and local adjustments or changes were made. For this study, the response categories of six items on the teacher questionnaire were expanded from yes-no choices to percentage categories in order to sensitize the response. Both instruments were field-tested in a vocational agriculture program not included in the sample population. Minor changes in the wording of two items were then made.

The population for the study consisted of the students in 51 Utah vocational agriculture programs who had completed at least one year of the program, and their vocational agriculture teacher. The sampling unit used in the study was schools with vocational agriculture programs. Twenty Utah high schools offering vocational agriculture were randomly selected for study, representing 39.1% of all (51) Utah vocational agriculture programs.

Between February 1 and March 15, 1982, the questionnaires were administered to the selected students and teachers. At each school, either a graduate student administered the questionnaire or specific instructions as to their administration were given to the vocational agriculture instructor, a student teacher or a substituting teacher. All second, third and fourth year vocational agriculture students in attendance on the day of the survey completed the questionnaires as did their vocational agriculture teacher(s). All questionnaires were personally delivered and picked up from each school to insure a 100% return.

Nonparametric statistics were used to evaluate the data in this study as assumptions necessary for use of parametric statistics could not be met. The statistics used included percentages, frequencies, Chi square, Kendall's tau, Cramer's V and Rao's V in a discriminant analysis.

Data Sources

Participants in this study included 717 vocational agriculture students and 26 vocational agriculture teachers. The majority of students were in their second and third years of vocational agriculture (45.3% and 37.0% respectively). Over half of the surveyed students (66.1%) lived in a rural area (less than 5,000 population), while 26.5% lived in towns (5,000 to 25,000) and 7.4% reported living in a city (over 25,000 population). Parents of the students earned a living in either production agriculture (20.4%), part-time agriculture (25.5%), agri-business (8.5%) or non-agriculture (45.6%).

The teachers surveyed included 11.5% with less than five years of teaching experience, 30.8% with five to ten years teaching experience, 7.7% with 11 to 15 years of experience and 50.0% with over 16 years of teaching experience.

RESULTS

Findings

Analysis of the student responses indicated 80.3% of them had supervised occupational experience programs. According to the data gathered, 66.3% of the students with supervised occupational experience programs indicated that they had a production type program (growing livestock or crops). Another 41.7% indicated they had some type of work experience as a supervised occupational experience program, working for someone else in an agriculture related job. An additional 11.3% reported owning some type of an agriculture related business themselves, and the remaining 6.8% indicated they had some other type of supervised occupational experience program. Of the 19.7% (141 students) who reported having no supervised occupational experience program, 11.3% also reported having no agricultural career goal.

Over one half (53.8%) of Utah vocational agriculture teachers sampled had more than 75% of their students with a supervised occupational experience program. Data revealed that 19.3% of the sampled teachers had less than 50% of their students with supervised occupational experience programs and the remaining 26.9% reported having between 51% and 75% of their students with supervised occupational experience programs.

Four of the 22 identified variables on the teacher questionnaire were found to have a significant relationship (at the .05 level) with those programs having a high percentage of the students with supervised occupational experience programs. The statistical treatment of variables to determine both the level of significance and the strength of the relationship was Kendall's tau in the case of ordinal data. With nominal data (see asterisked * variables), a Chi square was used to determine the level of significance and Cramer's V to determine the strength of the relationship.

Variables found to be significant on the teacher questionnaire were as follow: (1) number of years of teaching experience, (2) the portion of the students grade dependent on their supervised occupational experience program, (3) percent of FFA membership and (4) whether or not the students were informed that they must have a supervised occupational experience program before they enrolled in vocational agriculture* (see table 1).

A discriminant analysis was performed on the data to determine the combined ability of the four significant variables to discriminate between programs with 75% or more students having supervised occupational experience programs and those with less than 50% of the students with a supervised occupational experience program. A stepwise selection method was used where independent variables were selected for entry into the analysis on the basis of their discriminating power. The criterion for selection was Rao's V, a generalized distance measure. Using this technique, the variable selected was the one which contributed the largest increase in V when added to the previous variables.

Results of the discriminant analysis are presented in Table 2. The three discriminating variables produced a strong degree of separation as indicated by the canonical correlation of .85, the eigenvalue of 2.5 and the Wilks' Lambda of .29 for the discriminant function. The standardized canonical discriminant function coefficients indicated that the variable of number of years of teaching experience had the most discriminating power within the function. The remaining order of discriminating power for the variables in the function was (2) if students were informed they must have a supervised occupational experience program before they enrolled in vocational agriculture and (3) the portion of the students grade dependent on his experience program. Based on these three variables, the chances of accurately predicting which group a teacher would fall in (whether he/she had greater than 75% of his/her students with an experience program or less than 50% with one) were 94.7%. (This figure is based on a group size of 26 teachers which increases the chance of error due to small sample size).

Variables not found to have a significant relationship to the percent of students with supervised occupational experience programs were: (1) the type of the vocational agriculture program, (2) provision of a school vehicle*, (3) release time for supervised occupational experience program visits*, (4) reimbursement for expenses*, (5) length of contract, (6) average number of visits per student, (7) average amount of time spent on supervised occupational experience program visits, (8) administrative permission to remove students from the program if they do not have a supervised occupational experience program*, (9) enrollment (size) of high school, (10) distance teacher lives from school, (11) condition of school facilities, (12) amount of class time spent on supervised occupational experience programs, (13) number of classes other than vocational agriculture taught by the teacher, (14) number of teachers in the program, (15) number of students in the vocational agriculture

TABLE 1

RELATIONSHIP BETWEEN SELECTED TEACHER VARIABLES AND HAVING OVER 75% OF STUDENTS WITH SOEP
(n = 26)

Variable	Coefficient of Correlation[a]	Variable	Coefficient of Correlation[a]
Type of program		Enrollment (size) of high school	.11
Production Agriculture	.16		
Agriculture Business	.24	Distance teacher lived from high school	-.09
Horticulture	.16		
Agriculture Mechanics	.12		
Years of teaching experience	.51*	Condition of school facilities	.15
Provision of a school vehicle$^+$	.23	Amount of class time spent on SOEP instruction	.14
Release time for SOEP visits$^+$	.22		
Reimbursement for expenses$^+$	.42	Other classes taught	.31
Length of contract	.97	Number of vo-ag teachers in school	.21
Average number of visits per student	.80	Size of vo-ag program	.04
Amount of time spent on visits	-.10	Percentage of students belonging to the FFA	.42*
If school allows students to be removed if they do not have an SOEP$^+$	.31	Provision of facilities for student use for SOEP$^+$	.42
Portion of students grade dependent on SOEP	.38*	Cooperative project for students SOEP$^+$	.17
If students were informed that they must have SOEP	.56*	Percentage of students entering agricultural careers	.25

[a] For ordinal data, the coefficient is Kendall's tau; for nominal data, the coefficient is Cramer's V.

$^+$Indicates nominal data.

*Significant at the .05 level.

TABLE 2

DISCRIMINANT ANALYSIS OF SELECTED TEACHER VARIABLES ON HAVING OVER 75% OF STUDENTS WITH SOEP
(n = 26)

Variable	Rao's V	Change in V	Significance	Standardized Canonical Discriminant Function Coefficient
Number of years of teaching experience	19.97	19.97	0.00	.85
If students were informed that they must have SOEP	35.29	15.59	0.00	-.51
Portion of the students grade dependent on SOEP	42.54	7.25	0.07	.44

Eignevalue = 2.5 Canonical correlation = .85 Wilks' Lambda = .29 Significance = .00

program, (16) provision of school facilities for student supervised occupational experience use*, (17) cooperative project for students to use for supervised occupational experience programs*, and (18) percentage of students entering agricultural careers.

Data gathered from students indicated all 14 variables identified on the student questionnaire were significantly related to whether or not a student had a supervised occupational experience program. (The same statistical treatment was used for student data as was for teacher data). These significant variables were: (1) size of the area in which the student lives, (2) year in vocational agriculture, (3) how their parents earn a living, (4) if they were informed they had to have a supervised occupational experience program before they enrolled in vocational agriculture*, (5) whether or not they are required to keep record books in their vocational agriculture class*, (6) amount of classroom instruction on supervised occupational experience programs, (7) number of program visits made by instructor, (8) amount of assistance provided by the teacher in obtaining a supervised occupational experience program*, (9) FFA membership, (10) level of activity in the FFA, (11) level of activity in other school activities, (12) plans for college attendance*, (13) plans to have an agricultural related career* and (14) grade point average (see Table 3).

A discriminant analysis of these 14 variables revealed that only nine of them had any significant power to discriminate between students with supervised occupational experience programs and those without (see Table 4). These nine variables produced only a moderate degree of separation as indicated by the canonical correlation of .49, the eigenvalue of .32 and the Wilks' Lambda of .76. The standardized canonical discriminant function coefficients indicated that the variable with the most power to discriminate between the two groups (with experience programs and without) was the number of times a student was visited by his/her teacher. The remaining order of discriminating power for the variables in the function was (2) the level of activity in the FFA, (3) whether or not they were informed that they must have a project before they enrolled in vocational agriculture*, (4) plans to have an agricultural related career*, (5) the size of the area in which they live, (6) the amount of assistance provided by the teacher in regard to their supervised occupational experience program, (7) their grade point average, (8) whether or not they are required to keep record books*, and (9) the way in which their parents earn a living. Based on these nine variables, the chances of correctly predicting which group a student would fall in (whether or not he/she had an experience program) were 77.5%.

Reasons given by those students not having supervised occupational experience programs were as follow: (1) already have a job which is not agriculture related (given by 41 students), (2) have no facilities (34 students), (3) plan on having one, just have not accomplished it yet (34 students), (4) unable to obtain financing (21 students), (5) have to work at home (18 students), (6) did not understand how to set one up (17 students) and (7) parents would not let them have one (seven students).

Analysis of the data showed the percentage of students with supervised occupational experience programs increased with each incremental increase in the following variables: (1) area in which the student lived, (2) grade point average, (3) way in which parents earned a living ,and (4) year in vocational agriculture. For example, of those students living in cities, 60.4% had supervised occupational experience programs.

TABLE 3

RELATIONSHIP BETWEEN SELECTED STUDENT VARIABLES AND HAVING AN SOEP
(n = 636)

Variable	Coefficient of Correlation[a]	Variable	Coefficient of Correlation[a]
Size of area in which student lives	.13*	Amount of assitance provided by the teacher on SOEP	-.26*
Year in vo-ag	-.11*	FFA membership[+]	.11*
How parents earn a living	.10*	Level of activity in FFA	-.27*
If student was informed that they must have SOEP[+]	.22*	Level of activity in other school activities	-.07*
If student is required to keep record books[+]	.26*	Plans to attend college[+]	.13*
Amount of classroom instruction on SOEP	-.20*	Plans to have an ag-related career[+]	.25*
Number of times teacher visited student	-.30*	Grade point average	-.17

[a] For ordinal data, the coefficient is Kendall's tau; for nominal data, the coefficient is Cramer's V.

[+] Indicates nominal data.

*Significant at the .05 level.

TABLE 4

DISCRIMINANT ANALYSIS OF SELECTED STUDENT VARIABLES ON HAVING AN SOEP
(n = 636)

Variable	Rao's V	Change in V	Significance	Standardized Canonical Discriminant Function Correlation
Number of times student is visited by teacher	61.97	61.97	0.00	-.24
Level of activity in FFA	92.59	30.62	0.00	-.26
If student was informed that they must have SOEP before enrolling in vo-ag	117.0	24.36	0.00	.28
Plans to have an ag-related career	137.8	20.83	0.00	.30
Size of area in which student lives	154.4	16.44	0.00	.29
Amount of assistance provided by teacher with SOEP	170.8	16.44	0.00	-.33
Grade point average	181.2	10.42	0.00	-.26
If students are required to keep record books	191.3	10.06	0.00	.24
Way in which parents earn a living	197.0	5.66	0.02	.17

Eigenvalue = .32   Canonical correlation = .49   Wilks' Lambda = .76   Significance = .00

Of those living in towns, 76.8% had an experience program and of the rural students, 83.9% had a supervised occupational experience program.

CONCLUSIONS

1) Of 717 Utah vocational agriculture students surveyed in the study, 80.3% had supervised occupational experience programs. Of the 19.7% without supervised occupational experience programs, 11.3% also reported having no agricultural career goal. The Utah State Board of Education vocational staff has stated that a career goal is to be a program standard in all Utah vocational education programs. This standard is not being strictly adhered to in the case of vocational agriculture. If only those students with an agricultural career goal were permitted membership in vocational agriculture classes, the resulting reduction in student numbers would provide teachers with more potential time to be spent making student visits.

2) Of 26 Utah vocational agriculture teachers surveyed in the study (representing 38.8% of the total population), 53.8% had more than 75% of their students with supervised occupational experience programs. Another 19.3% of the teachers reported having less than 50% of their students with supervised occupational experience programs. As the value of experiential learning or supervised occupational experience programs is said to be of great importance in the educational success of vocational students, it would seem that many Utah teachers are not as effective as they could be. Students without experience programs are deprived of the opportunity to gain useful skills and experience in decision making during their years in vocational agriculture.

3) Only four of 22 factors identified on the teacher questionnaire were found to be significantly related to those programs having 75% or more students with supervised occupational experience programs. These variables were: (1) years of teaching experience, (2) making a portion of the students' grade dependent on their experience program, (3) informing students they must have a supervised occupational experience program before they enroll in vocational agriculture and (4) percent of students belonging to the FFA. A discriminant analysis showed three of these four variables to have significant power to discriminate between the two groups of teachers (those with more than 75% of their students with experience programs, and those with less than 50% with projects). Apparently, variables other than those identified on the teacher questionnaire have an influence on the number of students who are carrying out supervised occupational experience programs. One possible factor is suspected to be teacher attitude toward and commitment to supervised occupational experience programs.

4) All 14 factors predicted to be associated with those students who have supervised occupational experience programs were found to be significant. However, a discriminant analysis of these variables revealed that only nine of them had any significant power to discriminate between students with supervised occupational experience programs and those without (see Table 4). Of these nine factors, the following four are strictly within the control of the teacher: (1) number of times the students are visited by the teacher, (2) whether or not students were informed that they must have an experience program before they enroll in vocational agriculture, (3) the amount of assistance provided by the teacher with supervised occupational experience programs and (4) whether or not students are required to keep record books in their vocational

agriculture class. By concentrating on these specific teaching practices, the teacher could increase the number of students participating in supervised occupational experience programs.

Implications

1) Based on the findings of the study, a major philosophical concern becomes obvious. Should teachers follow traditional vocational practices and work hard with those students whose need is greatest, who also are most likely candidates for jobs requiring "less than a baccalaureate degree", or should they maximize the efficient expenditure of teacher time by working with the good students from agricultural environment? In either case, teacher knowledge of those four of nine discriminant variables that are within teacher control should increase the probability that more students will participate in experience programs and the teachers' time will be more efficiently used.

2) Time management theory can be used to argue that the 11.3% of students in Utah vocational agriculture programs who do not wish to work in agriculture can be better served by another school program. Many teachers do not currently visit those students whose purpose is to prepare for agricultural employment as often as they perhaps should, nor do the teachers provide sufficient assistance in support of students' experience programs. Available teacher visitation time should be spent in support of students with agricultural vocational needs. Saving visitation time that could be used to support the vocational needs of students is recommended by the writers.

3) Findings of this study lead to the implication that programs with high proportions of less academically capable students--students who live in urban areas and students whose parents do not farm--will probably not have the same high percentage of students participating in experience programs unless the teacher is given smaller numbers and/or a lighter teaching load. As the proportions of average or below average students from non-farm backgrounds increase, realistic laboratory simulations of industry settings become more important in terms of adequately preparing students for an agricultural career.

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ATTITUDES OF NORTH DAKOTA SCHOOL ADMINISTRATORS AND VOCATIONAL AGRICULTURE INSTRUCTORS TOWARD SUPERVISED OCCUPATIONAL EXPERIENCE PROGRAMS

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INTRODUCTION

This paper is based upon data gathered and analyzed in two studies concerned with attitudes toward Supervised Occupational Experience Programs in Vocational Agriculture. A study by Willardsen(1) examined attitudes of school administrators while research done by Franzen(2) was concerned with the attitudes of the Vocational Agriculture Instructors in North Dakota.

The two studies upon which this paper was based also had other objectives not reported here. Additional data were gathered and analyzed for these studies and comparisons were made which are not reported in this paper because of their total scope. This additional information is available upon request to those who are interested.

NEED FOR THE STUDY

Supervised Occupational Experience Programs are an essential component of programs in Vocational Agriculture. This concept provides a unique setting in which students are motivated, learn by actual participation, and gain essential competencies in their chosen occupations. These programs provide the doing so essential to learning.

Supervised Occupational Experience Programs are currently a subject of concern among teachers, supervisors and teacher educators in Agricultural Education. There is concern that these programs need strengthening and added support. The level of importance the profession attaches to Supervised Occupational Experience Programs was indicated by the National Conference held in Alexandria, Virginia, during the last week in July of this year. Leaders in Agricultural Education are making a special effort to examine and strengthen Supervised Occupational Experience Programs in Vocational Agriculture.

This level of concern is also indicated by the scope and recency of research involving Supervised Occupational Experience in Vocational Agriculture. Barrick(3) studied program improvement by supervisors in 1978 and Householder(4) examined perceptions of supervisors in 1976. Williams(5) studied Supervised Occupational Experience Programs in Iowa in 1977 and Davis(6) carried out a related study in that state in 1978. Reakes and Welton(7) examined teacher roles in 1977. This intensive research level indicates both the importance of Supervised Occupational Experience Programs and a high degree of concern for their success.

The scope and effectiveness of these programs is influenced greatly by the Vocational Agriculture teacher and by local administrators who formulate and administer policy. This paper, and the two studies upon which it is based, represent another effort to secure information needed to strengthen and improve Supervised Occupational Experience Programs in Vocational Agriculture.

OBJECTIVES OF THE STUDY

Purpose

The purpose of this study was to examine the attitudes of North Dakota school administrators and Vocational Agriculture instructors toward Supervised Occupational Experience Programs in Vocational Agriculture.

Specific Objectives

The specific objectives of the research reported in this study were:

1. To determine the level of agreement with selected educational concepts of Supervised Occupational Experience Programs by North Dakota Vocational Agriculture instructors.

2. To determine the level of agreement with selected educational concepts of Supervised Occupational Experience Programs by North Dakota school administrators who administer Vocational Agriculture programs.

3. To compare levels of agreement with selected educational concepts of Supervised Occupational Experience Programs between North Dakota school administrators and Vocational Agriculture instructors.

4. To determine the willingness of North Dakota school administrators who administer Vocational Agriculture programs to support selected aspects of Supervised Occupational Experience Programs.

METHODS

School Administrator Study

The population for the school administrator study consisted of all North Dakota school superintendents, principals and vocational directors who were administering secondary Vocational Agriculture programs during the 1980-81 school year. A direct mail questionnaire was developed, tested with a pilot group and mailed to all 165 members of the study population. This questionnaire contained 17 educational concept statements and 8 statements designed to measure willingness to support Supervised Occupational Experience Programs. After follow-up procedures a response rate of 85% was attained. Responses from early and late respondents did not appear to differ substantially.

The responses to both sets of statements were assigned values from 5 for strongly agree to 1 for strongly disagree. Means and standard deviations were then calculated for each statement.

Vocational Agriculture Instructor Study

The population for the Vocational Agriculture instructor study consisted of all those teaching secondary Vocational Agriculture in North Dakota during the 1980-81 school year and who were continuing to teach in 1981-82. A questionnaire with the same concept statements responded to by school administrators was administered at the All Service Vocational Conference in August, 1981. Questionnaires were mailed to those not attending this conference. The response rate was greater than 90%.

Comparison of Agreement with Concepts

Both population groups indicated their level of agreement with 17 concept statements. The mean scores for the levels of agreement between these two groups were compared by calculating t scores.

RESULTS

The levels of agreement with seventeen educational concepts concerning Supervised Occupational Experience Programs are shown in Table I. Table I contains mean scores for the responses of both the instructor and administrator groups as well as t scores reflecting the difference between the mean scores for these two groups. The statements are arranged in order of their mean score for the Vocational Agriculture instructors.

Vocational Agriculture Instructor Responses

North Dakota Vocational Agriculture instructors indicated a very

TABLE I

NORTH DAKOTA SCHOOL ADMINISTRATORS' AND VOCATIONAL AGRICULTURE INSTRUCTORS' LEVEL OF AGREEMENT WITH EDUCATIONAL CONCEPTS OF SUPERVISED OCCUPATIONAL EXPERIENCE PROGRAMS

Concept Statements	Vocational Agriculture Instructors		School Administrators		t Scores
	N = 77		N = 141		
	$\bar{X}$	s	$\bar{X}$	s	
1. Supervised Occupational Experience Programs in Vocational Agriculture are programs based on the educational philosophy of "Learning by Doing."	4.66	.48	4.34	.66	4.11*
2. Supervised Occupational Experience Programs are an essential element of a complete Vocational Agriculture program.	4.61	.65	4.14	.82	4.64*
3. Each member of the board of education should have an understanding of the purpose and functions of the Supervised Occupational Experience Programs in Vocational Agriculture.	4.54	.55	4.04	.78	5.51*
4. It is essential that the Supervised Occupational Experience Program be supervised by the Vocational Agriculture instructor during the summer months as well as when school is in regular session.	4.48	.72	3.95	.96	4.51*
5. The Supervised Occupational Experience Program should include placement of high school students as employees of local agribusiness firms if it is appropriate and meets the needs of their occupational goals.	4.40	.73	3.96	.74	4.23*
6. The Supervised Occupational Experience Programs should include placement of urban vocational agriculture students on area farms if it is consistent with their occupational goals.	4.32	.72	3.71	.80	5.75*

TABLE I (continued)

Concept Statements	Vocational Agriculture Instructors		School Administrators		t Scores
	N = 77		N = 141		
	$\bar{X}$	s	$\bar{X}$	s	
7. Supervised Occupational Experience Programs in Vocational Agriculture should be planned to cover a period of several years rather than for one year at a time.	4.12	.84	3.40	1.07	5.48*
8. Every student in Vocational Agriculture should carry out a Supervised Occupational Experience Program appropriate to his/her occupational goal.	4.10	.97	3.37	1.04	5.18*
9. The student's Supervised Occupational Experience Program should include a written record of planned objectives and completed accomplishments which relate to his/her occupational objectives.	4.09	.69	4.20	.59	1.18
10. High school Vocational Agriculture programs should not be recognized as an approved vocational course unless they contain provisions for Supervised Occupational Experience Programs.	4.08	1.03	2.85	1.13	8.14*
11. Students should establish areas of occupational interest before they plan their Supervised Occupational Experience Programs in Vocational Agriculture.	3.95	1.04	3.80	.81	1.10
12. Vocational Agriculture Advisory Committees should be requested to review Supervised Occupational Experience Programs when they evaluate and recommend program changes in Vocational Agriculture.	3.92	.82	4.01	.71	.81

TABLE I (Continued)

Concept Statements	Vocational Agriculture Instructors		School Administrators		t Scores
	N = 77		N = 141		
	$\overline{X}$	S	$\overline{X}$	S	
13. The Supervised Occupational Experience Program of high school students should be used for consideration by high school administrators when determining curriculum offered in the Vocational Agriculture program at the high school level.	3.88	.95	3.80	.71	.65
14. The Supervised Occupational Experience Program in Vocational Agriculture should be developed to reflect the employment needs of the area and region.	3.82	1.02	3.84	.89	.14
15. The instructor of Vocational Agriculture should keep a written record of planned objectives and completed accomplishments for each student enrolled in Vocational Agriculture.	3.73	1.00	4.11	.74	2.93*
16. High school juniors and seniors who choose to enroll in a single short term (semester) course in Vocational Agriculture should plan and develop a Supervised Occupational Experience Program.	3.40	1.19	2.78	1.04	3.84*
17. A minimum of at least three on-site farm or agribusiness instructor conferences should be planned by the Vocational Agriculture instructor for each Vocational Agriculture student to supervise and evaluate the Supervised Occupational Experience Program during each year of instruction.	3.01	1.06	3.73	.88	5.08*

* = Significant at the .01 level.

substantial level of agreement with many of the educational concept statements. Their mean scores ranged from a high of 4.66 (5.0 = strongly agree) to a low of 3.01 (3 = undecided) with mean scores greater than 4.0 (4.0 = agree) for ten of the seventeen concepts. Concepts expressing the central role of Supervised Occupational Experience Programs were rated highest. Statements concerning planning, records, and relationship to curriculum were rated lower. The instructors were undecided on a statement suggesting a minimum of at least three on-site visits for program supervision. It should be noted that the instructors were in substantial agreement with a statement that program supervision in the summer is essential.

Administrator Responses

Mean scores for responses of the school administrator group to the concept statements ranged from 3.95 to 4.34 (4.0 = agree) for eight of these statements. They rated seven statements from 3.37 to 3.80 (3.0 = undecided). Administrators tended to disagree somewhat with two statements which had mean scores of 2.78 and 2.85. These statements both referred to Supervised Occupational Experience Programs as a type of requirement. The administrators did agree that the programs are based upon learning by doing and are an essential element of a complete Vocational Agriculture program. These administrators tended to resist the idea of Supervised Occupational Experience Programs as a requirement even though they agreed with the essential nature of such a program.

Comparison of Concept Statement Responses

Vocational Agriculture instructors rated 15 of the 17 concepts higher than did the administrators with the difference between the means being statistically significant at the .01 level for 10 statements. The instructors were in greatest disagreement with administrators regarding Supervised Occupational Experience Programs as a requirement for approving Vocational Agriculture programs.

The administrators agreed more than teachers with the statement suggesting three visits per student. The administrators also gave a higher rating to a statement regarding records to be kept by the teacher. The difference in mean scores was significant at the .01 level for both of these statements.

Willingness of Administrators to Support Supervised Occupational Experience Programs

Eight statements indicating willingness to support Supervised Occupational Experience Programs are included in Table II with mean scores for the 141 responding administrators. Only one statement involving budgets received a score of more than 4.0 or the level of "agree." Six statements were rated from 3.46 to 3.72 (3 = undecided) and one

TABLE II

WILLINGNESS OF NORTH DAKOTA SCHOOL ADMINISTRATORS TO SUPPORT SELECTED ASPECTS OF THE SUPERVISED OCCUPATIONAL EXPERIENCE PROGRAMS IN VOCATIONAL AGRICULTURE.

	$\bar{X}$	s
1. The annual budget for the Vocational Agriculture department of your school should provide adequate funds to reimburse Vocational Agriculture instructors for transportation expenses for an appropriate number of Supervised Occupational Experience conferences for each student for each year.	4.02	.78
2. Instructional programs of Vocational Agriculture should be conducted on a year-round basis to take advantage of the opportunity for students to develop specialized competencies which are seasonal in nature.	3.72	.94
3. Your Vocational Agriculture instructor should prepare a teaching calendar which provides time for instruction in Supervised Occupational Experience Programs in each class of Vocational Agriculture.	3.68	.97
4. The Vocational Agriculture instructor should be employed on a year-round or 12 month contract to allot adequate time for planning, developing, evaluating, and supervising of the Supervised Occupational Experience Program of each student.	3.68	1.09
5. Scheduling of high school courses for juniors and seniors should be arranged to allow Vocational Agriculture students a part of the school day to be used for agribusiness placement as part of their Supervised Occupational Experience Program.	3.47	.99
6. The Vocational Agriculture instructor should be provided with adequate time to schedule at least three individual out-of-school Supervised Occupational Experience instructional conferences with each Vocational Agriculture student and his/her parents and/or his/her employer during each year of school.	3.46	.99
7. School schedules should be planned to enable the Vocational Agriculture instructor to leave the classroom and school at an opportune time for supervision of students and their Supervised Occupational Experience Program.	3.46	1.14

TABLE II (continued)

	$\bar{X}$	s
8. Your school's instructional schedule should provide at least one period of school instruction time, in addition to a regular preparatory period, for the instructor to work with and supervise students on an individual basis with their Supervised Occupational Experience Program.	3.27	1.14

statement, regarding school time for supervision, rated a mean score of 3.27. The level of willingness to support Supervised Occupational Experience Programs, as measured by these statements, seemed modest to weak.

Conclusions

1. North Dakota Vocational Agriculture instructors have considerable commitment to Supervised Occupational Experience Programs in Vocational Agriculture.

2. North Dakota Vocational Agriculture instructors, while supporting the concept of supervision during the summer months, are undecided about a suggested minimum of three supervisory visits per student each year.

3. School administrators in North Dakota generally agree that Supervised Occupational Experience Programs are an integral part of the Vocational Agriculture program but tend to be undecided or disagree with these programs as a requirement either for programs or undecided students.

4. North Dakota school administrators gave stronger support than did Vocational Agriculture instructors to concepts of a minimum number of supervisory visits and the keeping of program records by the teacher.

5. The willingness of North Dakota school administrators to support Supervised Occupational Experience Programs seems to be modest and in some cases weak.

Recommendations

1. Means such as conferences, seminars and other methods of communications should be used to keep North Dakota school administrators better informed of the nature and purpose of Supervised Occupational Experience Programs.

2. Each Vocational Agriculture instructor should keep his/her school administrators well informed of the Supervised Occupational Experience Program activities and accomplishments in his/her school.

3. Further study should be done to determine why the North Dakota Vocational Agriculture instructors rated statements concerning records and minimum visits lower than did the administrators.

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STUDENT BENEFITS FROM SCHOOL FARM ACTIVITIES AS PERCEIVED BY ADMINISTRATORS AND INSTRUCTORS

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INTRODUCTION

Practical experience has played an important role in vocational agriculture since its initiation. A dilemma arises, however, in regard to the means for providing these experiences for a diverse group of vocational agriculture students. Providing students with planned experience in agricultural occupations, commonly referred to as supervised occupational experience (SOE), is becoming more difficult; but should not be declared impossible and rejected as a learning component of vocational agriculture.

Innovative (or renewed) types of SOE programs must be utilized to meet students' needs and to accomplish educational objectives. One approach to expanding SOE opportunities for students is the systematic use of school or vocational agriculture farms. Phipps (1972) indicated that the use of school farms in the vocational agriculture instructional program has fluctuated over the years. In the early 1900s schools offering vocational agriculture frequently owned farms so students could receive practical training. The initiation of ownership enterprises on the home farms by students reduced the use of school farms, resulting in disposal of farms by many schools. The 1970s found educators returning to school-based SOE programs for vocational agriculture students, but an expanded philosophy was apparent.

Placement in school-owned facilities is today frequently referred to as "directed laboratory experience." The teacher (or other designated and approved person) must supervise student SOE programs carried out using school facilities. Sites for laboratory SOE programs not only include school farms, but also land laboratory, forestry plots, greenhouses, meat laboratories, and other (SOE Handbook, 1982).

School-based SOE programs provide an alternative to farm-based, home-based, and agribusiness-based SOE programs. They have the potential for meeting the needs of a diverse group of students. The vocational agriculture enrollment in many schools have shifted from primarily "farm boys" to a mix of boys and girls from farms and cities during the 1960s and 1970s (Warmbrod, 1980).

OBJECTIVES OF THE STUDY

This research was designed to accomplish four objectives:

1. To determine the characteristics of school farms operated by selected vocational agriculture departments in the region of Iowa, Kansas, Missouri, and Nebraska.

2. To identify how school farms are utilized in vocational agriculture instructional programs in the region.
3. To identify personal and situational characteristics of teachers and school administrators primarily responsible for school farms in the selected vocational agriculture departments.
4. To identify the benefits high school vocational agriculture students derive from school farm activities as perceived by vocational agriculture teachers and school administrators.

METHODS AND PROCEDURES

A preliminary survey was mailed to vocational agriculture teachers in Iowa, Missouri, Nebraska, and Kansas to identify programs with school farms and to identify teachers and adminstrators with primary responsibilities for the school farm. These procedures identified 113 departments in the four-state region with school farms. The number from each state and the number included in the "selected sample" for this study follows:

State	Departments Identified as Operating School Farms	Number in Selected Sample
Iowa	51	26
Missouri	35	18
Nebraska	15	12
Kansas	12	12
	113	68

Since a number of teachers from each state did not respond to the preliminary survey, the total population of departments with school farms probably was greater than 113. Therefore, the 68 departments included in this study was recognized as a "selected sample."

A mail questionnaire was used to collect data from the teachers and administrators identified as having primary responsibility for the school farm. The questionnaire gathered personal and situational data from the respondents. It also included 53 items to secure perceptions of the benefits vocational agriculture students receive from their involved in school farm activities. The six program objectives and their contributing objectives served as a basis frame of reference for development of the benefit items (U.S. Department of Health Education and Welfare, 1966). Administrators and instructors were asked to rate each item on a one to nine scale where 1 = no benefit, and 9 = great benefit. Usable data were received from 41 administrators and 45 vocational agriculture instructors. Frequencies, means, ranks, and percentages were used to provide a descriptive analysis of the data.

FINDINGS

The findings are organized to answer four research questions that parallel the objectives of this study.

Research Question 1: What are the characteristics of school farms operated by selected schools in the four-state region?

A majority (73.4 percent) of the school farms were located one mile or less from the classroom and 55.6 percent of these school farms were 10 acres or less in size. About one-fourth of these farms utilized a person other than the vocational agriculture instructor to help supervise student activities. Almost all of the teachers (93.3 percent) and administrators (92.7 percent) viewed the school farm as an important teaching resource for the vocational agriculture department. Further, 86.7 percent of the teachers and 87.8 percent of the administrators stated that they would be responsive to initiating the school farm concept if their department did not presently operate one.

The most common activities conducted on the school farms and the percentage of departments using the activity follows:

Producing field crops	82.2%
Operating agriculture machinery and equipment by vocational agriculture students	71.1%
Conserving the soil and other natural resources	68.9%
Conducting no-till or minimum tillage operations	66.7%
Conducting yield tests on feed grains	66.7%
Conducting fertilizer demonstrations	62.2%
Conducting herbicide demonstrations	60.0%
Conducting plant population and yield tests	60.0%
Conducting land judging contests	53.3%
Conducting insecticide demonstrations	44.4%
Conducting yield tests on small grains	33.3%
Raising livestock	31.3%

Research Question 2: How are school farms utilized in vocational agriculture instructinal programs in the four-state region?

Teachers were asked to rank the use of the school farm by the vocational agriculture department. Table 1 presents the findings. The primary use of these facilities was to supplement the vocational agriculture classroom by serving as a laboratory. Perhaps the relatively close distance (mean = 2.1 miles) allowed the instructors to frequently use the farm as a laboratory to support classroom instruction.

Rankings two and three revealed that instructors recognized the school farm more as a place to make money for the FFA Chapter and department than as a place for non-farm students to gain supervised occupational experience.

Finally, demonstration and experimentation activities were ranked fourth and fifty respectively. The vocational agriculture instructor may not possess the expertise to carry out experimentation activities. However, several successful school farms utilize demonstration activities to introduce new agricultural technology to vocational agriculture students and adults in the community.

Table 1. Rank order regarding the use of the school farm by the vocational agriculture department.

Method of Use	Rank
Serves as a laboratory for the vocational agriculture classes	1
Provide a place for non-farm students to gain supervised occupational experience	3
Demonstrate new agricultural practices to the community	4
To make money for the FFA Chapter and/or the vocational agriculture department	2
Agricultural experimentation activities	5

(N=45)

The data further revealed that 62 percent of the departments utilized the school farm for group or cooperative ownership of crops and livestock. Almost one-fourth utilized the farm for individual student ownership of livestock or crops. Finally, 12.3 percent of the vocational agriculture students attained their primary SOE from school laboratories (5.6 percent on school farms, 5.0 percent in agricultural mechanics laboratories, and 1.7 percent in greenhouses).

Research Question 3: What are the personal and situational characteristics of teachers and school administrators primarily responsible for school farms in the four-state region?

The following partial role is presented for the 45 teachers included in the study:

1. A majority (77.8 percent) of the teachers were teaching in single teacher departments that had a mean enrollment of 61.3 students, 39.6 farm students and 21.7 non-farm students.
2. About one-half (49.2 percent) of the teachers had taught six years of less. The mean years of teaching was 9.6.
3. Almost two-thirds (64.7 percent) of the teachers had been responsible for a school farm for six or more years.

A partial profile of the 41 school administrators in this study follows:

1. They had a mean of 12.3 years of experience as a school administrator and 5.9 years of experience with a vocational agriculture farm. Five percent had experience as a vocational agriculture teacher.
2. Almost one-half (48.8 percent) were or had been involved in farming, and one-third had been employed in an agribusiness firm.

Research Question 4: What benefits do vocational agriculture teachers and school administrators perceive vocational agriculture students receiving from participation in school farm activities?

Table 2 presents the means and standard deviations (based on a 1-9 scale; 1 = no benefit, 5 = average benefit, and 9 = great benefit) for the 53 benefits as perceived by vocational agriculture instructors and school administrators. The 53 benefits are grouped under six program objectives for vocational agriculture.

Teachers and administrators alike rated most of the benefits above five (average benefit) on a nine-point scale, indicating that both groups of educators perceived a number of student benefits resulting from students participating in agricultural activities on school farms. In general, they were saying that school farms helped accomplish the generic objectives of vocational education in agriculture.

The five greatest benefits students receive from school farm activities as perceived by instructors were: (1) generates increased participation in the FFA, (2) promotes group activities which develop individual leadership abilities, (3) teaches students to respect the opinions, feelings, and concerns of others, (4) generates circumstances for students to market agricultural products, and (5) allows students to understand the financial requirements of a farm business.

The five greatest benefits students receive from participating in school farm activities as perceived by administrators were: (1) generates circumstances for students to market agricultural products, (2) provides students with supervised occupational experience in production agriculture, (3) involves students with the total crop production cycle, (4) allows students to apply the principles of soil science, and (5) encourages use of records and reports similar to those used in agribusiness.

Teachers and administrators alike rated item B5, "develop competencies in livestock production needed in non-farm agribusiness occupation," lowest, with a mean score of 4.00 and 4.29, respectively.

Based on the finding of this study, the following recommendations are made:

1. Ways and means of utilizing school farms in the vocational agriculture instructional program should be included in preservice and inservice vocational agriculture teacher education programs.
2. Alternative ways of managing vocational agriculture school farms should be investigated.
3. This study should be duplicated in other regions of the country. In addition to responses from teachers and administrators, perceptions of students and parents should also be assessed.
4. Guidelines for using school farms to support the classroom/laboratory instruction, FFA activities, and SOE components of vocational agriculture should be developed for use by teachers and administrators.
5. The relationship between school farm management and operation by the vocational agriculture teacher and teacher tenure should be investigated.

Table 2. Mean ratings and standard deviations for benefits students received from agricultural activity on school farms as perceived by vocational agriculture teachers (N=45) and school administrators (N=41).

Benefit*	Teacher Mean S.D.	Administrators Mean S.D.
A. Development of productional agriculture compentencies.		
1. Assists students in developing skills necessary to obtain a start in farming	6.58 1.63	6.22 1.94
2. Teaches students to produce agricultural products efficiently	6.56 1.47	6.39 1.60
3. Teaches students to efficiently market agricultural products	6.36 1.86	6.10 1.72
4. Allows students to understand the financial requirements of a farm	6.67 1.62	6.12 1.79
5. Develops an understanding of the need for efficient mechanization in agriculture	5.82 1.84	5.73 1.90
6. Allows students to make management decisions based upon an an analysis of farming records	6.47 1.60	6.42 1.58
7. Teaches students to conserve soil and other natural resources	6.42 2.14	6.20 2.04
8. Allows students to develop effective human relation skills	5.84 2.15	4.93 2.14
9. Teaches students to make efficient use of machinery, equipment and other physical resources of the farm business	5.69 1.88	5.68 2.04
10. Teaches students to make efficient use of farm labor	5.24 1.86	4.70 2.09
11. Encourages students to participate in activities to improve their home and its surroundings	5.16 2.20	4.73 2.37
B. Development of competencies needed in agricultural occupations other than production agriculture.		
1. Allows students to apply the principles of soil science	6.53 2.38	6.54 2.09
2. Involves students with the total crop production cycle	6.49 2.41	6.56 2.06
3. Develops competencies in business management which prepare students for agricultural occupations off-the-farm	5.38 1.83	5.90 1.63
4. Develops mechanical abilities needed in non-farm agribusiness occupations	5.09 1.88	4.56 2.12
5. Develops competencies in livestock production needed in non-farm agribusiness occupations	4.00 2.72	4.29 2.60
6. Develops an understanding of the services related to processing agricultural products	4.67 2.33	5.49 2.04
7. Generates circumstances for students to market agricultural products	6.73 2.09	6.63 1.66
8. Develops an understanding of the service and supplies provided by non-farm agribusinesses	6.18 1.76	6.05 1.52
9. Allows students to understand selling principles used by agricultural supply and service businesses	5.91 2.21	5.83 1.82
10. Develops student interaction with agribusiness so they can understand how agricultural businesses are financially operated	5.53 2.07	5.78 1.90
11. Allows students to discover what employers expect from employees	4.49 2.24	4.63 2.22
12. Allows students to understand business policies and procedures	5.09 2.15	5.15 1.91
13. Allow students to learn how agribusinesses maintain effective customer relations	5.20 2.22	4.78 1.97
14. Increases students' respect for other person's property	6.13 1.93	5.66 2.09

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*Benefits are listed under the six major program objectives for vocational agriculture.

Table 2 Continued.

Benefit	Teacher Mean	Teacher S.D.	Administrators Mean	Administrators S.D.
15. Encourages use of records and reports similar to those used by agribusinesses	5.78	2.17	6.44	1.48
16. Teaches students to interpret records and reports in making agribusiness management decisions	6.02	1.83	6.42	1.43
17. Allows students to practice business procedures	5.91	1.81	6.24	1.58
18. Teaches students to follow established policies and regulations	6.04	1.60	6.20	1.50
C. Orientation to career opportunities in agriculture.				
1. Aids students in understanding the importance of agriculture	6.49	1.75	5.88	1.86
2. Allows students to recognize employment opportunities in farm and non-farm agricultural occupations	5.67	2.03	5.27	2.24
3. Generates situations where students can evaluate specific information regarding jobs in agriculture	4.80	1.85	4.88	2.23
4. Allows students to recognize their abilities, talents, and interests which relate to careers in agriculture	5.64	1.84	5.51	2.08
5. Provides students with supervised occupational experience in production agriculture	6.47	2.60	6.61	1.80
6. Helps students recognize the need for continuing education after high school to keep up with new developments in agriculture	5.56	1.98	5.66	2.03
D. Development of the abililty to secure placement and to advance in an agricultural occupation.				
1. Helps students recognize employment agencies and organizations they can use in seeking an agricultural occupation	4.47	2.20	4.49	2.30
2. Enables students to analyze opportunities for self-employment	5.11	2.08	5.17	2.27
3. Allows students to analyze agricultural career opportunities with respect to their personal interests and abilities	5.11	1.98	5.32	2.25
4. Increases student's interest in seeking employment in agriculture	5.87	1.93	5.46	1.95
5. Allows students to develop abilities, aptitudes and skills that are helpful in applying and interviewing for employment	4.82	2.20	4.34	2.42
6. Generates the incentive for students to plan and pursue educational programs appropriate to job requirements	4.76	1.91	4.76	2.11
7. Provides students with an understanding of ways and means to progress and advance in agricultural occupations	5.02	1.89	4.95	2.07
E. Development of human relations abilities.				
1. Generates an appreciation for the dignity of work	6.53	1.73	6.05	1.82
2. Teaches students to respect the opinions, feelings, and concerns of others	6.76	1.65	5.83	1.88
3. Dictates group interaction which generates the development of communication skills	6.56	1.88	6.10	1.96
4. Promotes the development of desirable behavioral patterns	6.33	1.77	5.90	2.01
5. Develops acceptable personal practices and work habits	6.29	1.65	5.95	1.86
F. Development of leadership abilities.				
1. Generates increased student participation in the FFA	6.84	1.77	6.17	1.99
2. Promotes group activities which in turn develops individual leadership abilities	6.80	1.80	6.15	1.89

Table 2 Continued.

	Benefit	Teacher Mean S.D.	Administrators Mean S.D.
3.	Generates an incentive for the development of community improvement activities	6.02 2.34	5.42 2.26
4.	Provides students with opportunities for involvement with local civic organizations	5.53 2.32	4.90 2.40
5.	Promotes the development of desirable relationships between farm and non-farm people	6.20 1.19	5.22 2.02
6.	Encourages students to participate in organizations or agencies which develop policies and programs affecting agriculture	5.33 2.20	5.29 2.22

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REPORTING RESEARCH IN AGRICULTURAL EDUCATION -- AN ANALYSIS OF THE NATIONAL AGRICULTURAL EDUCATION RESEARCH MEETING

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At a recent Golden Globe Award ceremony, Stanley Kramer, controversial producer of such film classics as "High Noon", "On the Beach", "The Defiant Ones", "Mad, Mad, Mad, Mad World", and over 40 other Academy Award nominated films, was recognized for outstanding achievement. Two comments he made during the acceptance speech stuck in my mind as being pertinent to our meeting today. He said, "I am never satisfied with what I have created; I'm always trying to make it better!" and, "It is a sign of maturity not to know all of the answers, but rather to ask the right questions!" During these next few minutes I will attempt to guide our thoughts to what we have created, and I will furthermore try to address the right questions!

We have just witnessed a progression in excellence in this, our national forum for research in agricultural education. My sincere congratulations to Dale and all the participants for a job well done! It is fitting that we pause at the end of this good day's work to reflect on the following key questions:

-Where have we come from? (How have we developed?)

-Where are we now? (What is the current status of NAERM?)

-Where should we be in the future? (What do we want NAERM to become?)

-How can we get there from here? (What policies, procedures and resources are needed in order to achieve our goals for the Meeting?)

It is unlikely that any one person has the answers to all of these questions; in fact, all of us could probably spend most of the week on this list and still be working on the last question. (Luckily, the Research Committee for the Ag Ed Division has been allotted an entire hour on Monday to provide future direction!) One of the problems I had in attempting this job has been the lack of readily available information on past NAERM's -- special thanks to Dale Oliver, Ron Brown, Bill Richardson, Glen Shinn and Hollie Thomas for their help in rounding up data on the earlier meetings. Most of the data in this report were gleaned from NAERM programs and/or reports made to the Research Committee plus analysis of papers presented at the two most recent meetings; the remainder were gained empirically as a result of my involvement with NAERM in various roles since 1977, including discussant, paper presenter, chairman-elect, chairman and now as chairman of the Research Committee.

EARLY DEVELOPMENT AND CURRENT STATUS OF THE NAERM

The NAERM had its beginning at the 1974 AVA Convention held in New Orleans. According to Hollie Thomas, the "founding father", it was a humble beginning: "They didn't even want to give us a room!" Locations and names of chairmen and their home institutions for subsequent years are presented in Figure 1.

FIGURE 1
Historical Development of the NAERM

Number	Year	Location	Chairman/Institution
1*	1974	New Orleans, LA	Hollie Thomas/Florida State U.
2	1975	Anaheim, CA	Hollie Thomas/Florida State U.
3	1976	Houston, TX	Glen Shinn/Mississippi State U.
4	1977	Atlantic City, NJ	William Richardson/Purdue U.
5	1978	Dallas, TX	Ben Byler/Mississippi State U.
6	1979	Anaheim, CA	Ron Brown/Mississippi State U.
7	1980	New Orleans, LA	L.H. Newcomb/Ohio State U.
8	1981	Atlanta, GA	M.J. Iverson/N.C. State U.
9	1982	St. Louis, MO	J. Dale Oliver/V.P.I. & S.U.

*Initially called the "Agricultural Research Seminar"

Through the years there has been a steady growth in such quantitative measures as: papers submitted, registrants, paper presenters, other participants, and total individuals involved on the program. Another indicater -- the use of concurrent sessions -- is of more recent vintage. Even with the acceptance rate at about 50%, it was necessary in 1979 to initiate four concurrent sessions, in order to accomodate all of the papers in one day. These were expanded to six in 1980 and to nine at this Meeting. Specific figures on the above factors for each of the years are presented in Table 1.

Thus we have seen over the past nine years a five-fold increase in proposals, a tripling in numbers of papers accepted, a five-fold increase in both numbers attending and program participants. Truly, NAERM has been in a growth mode.

An in-depth analysis of the studies reported and of the presenters themselves was made on the 1981 and 1982 Meetings. Table 2 includes level and method of the studies reported and the positions of the presenters.

Staff studies and graduate studies made up over three-fourths of all papers reported for both years, but staff studies alone constituted over 60% of the reports in 1982. Types or methods of research reported varied from historical to developmental in 1981, but causal-comparative, descriptive, and experimental comprised 83% of all reported that year. In 1982, causal-comparative made up one-half of the papers, while one-third were descriptive and just under 11% were experimental.

Table 1
Analyses of Factors Associated with the NAERM, 1974-82

Factors	1974	1975	1976	1977	1978	1979	1980	1981	1982
Papers Submitted	10	15	15	22	22	31	35	37	51
Papers Accepted	10	10	10	9	11	15	16	18	28
Rate of Acceptance	100%	66.7%	66.7%	40.9%	50%	48.4%	45.7%	48.6%	54.9
No. Concurrent Sessions	0	0	0	0	0	4	6	6	9
No. Referees	0	6	6	12*	12*	20*	5	10	10
Registrants	18	20	34	57	84	78	106	101	-
Paper Presenters	10*	14	15	12	17	24	27	35	50
Discussants	3	3	3	3	4	5	6	6	9
Other Participants	2*	4	9	9	12	24	25	21	23
Total Program Participants	15*	21	27	24	33	53	58	62	82

*Estimate

Table 2
Comparison of Studies
Reported at the NAERM, 1981-82

Factor	Year of Meeting			
	1981		1982	
Level of Studies	N	%	N	%
Graduate Studies	7	(38.9%)	10	(35.7%)
Staff Studies	7	(38.9%)	17	(60.7%)
Other (Projects, etc.)	4	(22.2%)	1	(3.6%)
TOTAL	18		28	
Methods	N	%	N	%
Historical	1	(5.6%)	-	-
Descriptive	5	(27.8%)	10	(35.7%)
Causal Comparative (Ex-Post Facto)	6	(33.3%)	14	(50.0%)
Experimental	4	(22.2%)	3	(10.7%)
Developmental	2	(11.1%)	1	(3.6%)
TOTAL	18		28	
Positions of Presenters	N	%	N	%
Graduate Students	5	(11.4%)	12	(24.0%)
Teacher Educators	25	(71.4%)	30	(60.0%)
Supervisors	1	(2.9%)	1	(2.0%)
Teachers	2	(5.7%)	4	(8.0%)
Other	2	(5.7%)	3	(6.0%)
TOTAL	35		50	

When the positions of presenters were analyzed, teacher educators were found to be involved in 71% of the studies reported in 1981 and 60% of those in 1982; graduate students made 11 and 24 percent of the reports, respectively. (Note: The percentages for the graduate student category would probably be higher if presenters were re-classified by where they were when the study was conducted. Since these data were not always indicated, location at the time of the meeting was used to categorize presenters.)

Another factor which does not show on the table but which is an indicator of professional interest in NAERM, is the location of presenters. The 35 paper presenters in 1981 represented 15 states; in 1982, the 50 presenters were from 20 states.

TRENDS AND EMERGING ISSUES

As we enter the 10th year for the NAERM, some definite trends are apparent. Of course, situational variables, such as the state of the economy, legislative effects on funding, publishing demands by colleges, and even the physical location of the meeting itself, can all affect future participation. But, assuming a continuation of current conditions, the following are likely to occur:

1. Increased numbers of paper proposals, comprising high quality, scholarly work -- which will result in pressure for item 2.
2. More papers accepted for presentation -- which, in turn, will require a longer meeting or more concurrent sessions (or both) and result in item 3.
3. Greater participation at the Meeting: more registrants, more discussants, and larger numbers involved as session chairpersons and facilitators.

Although the data are not as extensive nor the distinctions as clear, it is also likely that:

4. Teacher educators and studies under their direction will continue to dominate the program.
5. Well-executed causal-comparative and descriptive studies will make up the majority of papers reported, although experimental and developmental studies will also appear.

These projections raise several issues which must be considered if the NAERM is to fulfill its potential for serving the entire Agricultural Education Division. The issues are:

1. What is a reasonable level of acceptance for papers? How large should the meeting become?
2. Who should participate in the Meeting and to what extent? How can all segments of the Division be significantly involved?
3. Should the day, time and/or location be changed to improve participation?
4. What relationship should the NAERM have with the regional research conferences?
5. How can technology be utilized to improve/expand the Meeting?
6. How can the impact of the NAERM on the profession be better measured and improved?

7. How should the Meeting be supported? By registrations (self-supporting)? By the Division? By outside sources? Or by a combination of sources?

8. What changes in the management system are needed to handle and expand the Meeting?

RECOMMENDATIONS

I believe that the National Agricultural Education Research Meeting has evolved into one of the best of its kind in the field of education. It has done so because of the dedicated service of many people -- often with little recognition or reward. We owe much to those who chaired the early Meetings -- they had the vision and tenacity to bring the NAERM to its present prestigious level. Each of you here today have contributed to the progress of the Meeting -- many on a yearly basis. Other factors include the adherence to high standards and the placing of responsibility on a close circle of professionals -- the Research Committee. Growth appears inevitable, and change/adaptation will be required as a result. In order to guide and control this growth, I recommend the following:

1. Broaden the membership on the Agricultural Education Division Research Committee.

   This committee oversees all Division research activities, but certainly the NAERM is the largest activity. A broadly-based membership, representing all levels in the Division, could solve the problem of low supervisor and teacher involvement. If this entails a change in the date or length of the meeting, input from all areas would be needed. Jim Key is working on a proposal for membership; if you have any suggestions for changes, please contact him prior to the Research Committee meeting Monday afternoon.

2. Expand the financial base for the Meeting.

   The program should not be dependent on the vagaries of funding from any one source. I believe that we should utilize Division funds, donations from our friends in business and industry and registration fees to finance a high quality meeting. Expenses incurred by the chairman and his/her institution should be fully reimbursed so that the burden is not borne by the few, nor even by the wealthy. The time may be approaching when departments will be unwilling or unable to subsidize the NAERM. We could have difficulty finding anyone to serve as chairperson, unless all expenses are covered.

3. Improve the dissemination of results.

We must first devise ways to assess the impact of the Meeting, and then determine how to enhance it. Ron Brown estimated that about one-third of the papers end up in refereed journals. Is this conservative or generous? Are there other benefits? I don't know. We must find out. The packaging and distribution of papers, which was begun last year and continues today, is one way to encourage folks to take the research home and use it. However, it may be time to utilize technology such as microcomputer storage/retrieval (cassettes, floppy discs, etc.) videotaping, teleconferencing, or even microfiche to facilitate further utilization. The technology is there if we are wise enough to use it and are willing to pay for it!

4. Expand the public relations aspect of the Meeting.

   A corollary of item 3 is that much more must be done to get PR mileage from the NAERM. Our colleagues in other service areas of vocational education, as well as those in other areas of education and agriculture should be invited to attend as guests. News releases provided to participants for home consumption may help, and news media coverage of the Meeting should be arranged. Each of us has a role in this aspect of the Meeting. If we don't promote our best, who can be counted on to do so? Incidently, I hope we can develop a thorough account of past NAERMs so we do not lose our history.

5. Maintain high quality in the Meeting.

   We should continue to mandate quality levels in audio-visuals and printed materials for the meeting. The technical aspect of presentations is important. The referee-discussant format also must be maintained, even at the expense of reduced numbers of papers. These roles provide the necessary quality control, as well as needed feedback. Facilities and other physical arrangements should be the very best available. Those who attended the Meeting in Dallas in 1978 will recall how the spacious room gave added class to the entire event! The program, too, must be conducted in a brisk, professional manner, including starting and ending on time. A key to overall excellence is the system for placing responsibility for management on the chairman, with guidance from the Research Committee. This, too, should be continued.

As in many things that we do, the good is the enemy of the better, therefore, we must, as Stanley Kramer said, never be satisfied with what we have created. I hope that each of you will become further involved in the continued growth and development of this, our national forum for research in Agricultural Education. Let's keep a good thing growing! Best wishes to each of you for a happy holiday season and a prosperous 1983.

WHAT VOCATIONAL-TECHNICAL AGRICULTURAL EDUCATORS BELIEVE: THE NATIONAL OPINION POLL

Jasper S. Lee, Editor*
The Agricultural Education Magazine

The first national opinion poll on vocational-technical agricultural education was authorized by the Editing-Managing Board of The Agricultural Education Magazine at its meeting in December, 1981. The overall purpose of the poll was to gather information which would be helpful to the Editor in improving the quality of The Magazine. Such information was to relate to the opinions of the vocational-technical agricultural education profession in general and to The Magazine in specific.

OBJECTIVES

The general objective of the opinion poll was to assess the feelings of vocational-technical agricultural educators toward various trends, issues, and practices. The specific objectives were:

to determine the opinions of vocational-technical agricultural educators regarding program administration;

to determine the opinions of vocational-technical agricultural educators toward the curricula; and

to determine the opinions of vocational-technical agricultural educators regarding the profession in general, including professional organizations and the professional journal entitled The Agricultural Education Magazine.

METHODS AND PROCEDURES

The conduct of the opinion poll was similar in many respects to most any type of survey research, yet it probably was not as precise. The general procedures involved identifying the population, developing the opinionnaire, submitting the opinionnaire, receiving and analyzing the responses, and reporting the findings.

Population

The population was comprised of all individuals who subscribe to The Magazine, either singly or in bulk, and teachers in all secondary programs of vocational-technical agricultural education who were non-subscribers. In order to avoid duplication of individuals in the population, the mailing list of subscribers and a list of secondary schools with programs were merged.

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This involved deleting the names of the programs where one or more of the individuals teaching in them were on the subscriber list. The final merged list was comprised of 5,492 single subscribers, 615 bulk subscribers, 26 complimentary copies, 124 foreign subscribers, and 5,437 non-subscribers, or a total population of 11,694. The list of programs was provided by the Agriculture Program Specialist of the U. S. Department of Education, while the list of subscribers was provided by the Business Manager of The Magazine.

Development of Opinionnaire

The opinionnaire was developed with input from the faculty and graduate students in the Department of Agricultural and Extension Education at Mississippi State University. Initial direction in terms of content was provided by members of the Editing-Managing Board of The Magazine.

The instrument was designed for ease and simplicity in responding. In addition to a short section to collect demographic information, there were three major parts. Part I (Program Administration) contained 12 items related to mission, problems, and effectiveness of vocational-technical agricultural education. Part II (Curricula) was comprised of 10 items to assess curricula, including supervised occupational experience, student organization, and instructional materials. Part III (Professionalism) was comprised of nine items designed to determine opinions about various areas of the profession, with emphasis on The Agricultural Education Magazine.

While being developed, the instrument was reviewed by a committee of experts comprised of teacher educators, teachers, and graduate students to insure that it contained items of highest priority and to insure that the questions would be properly interpreted. The final instrument was designed to maximally use two pages in The Magazine. A dashed line was printed near the fold of The Magazine with "cut here" instructions. The instrument also included instructions on how to respond and where to mail the completed copy.

Submission of Opinionnaire

The opinionnaire was printed on the front and back of the next to the last pages (pages 21 and 22) in the May, 1982, issue of The Magazine. This monthly issue was mailed to the entire population in late April by M&D Printers in Henry, Illinois. The deadline for receiving responses was set as May 30, 1982. Only a few days are required for The Magazine to be distributed throughout the United States, even to the bulk subscribers. Individual subscriptions are delivered by the U.S. Postal Service. Bulk deliveries are handled by United Parcel Service.

Receipt and Analysis of Responses

Responses were received from 251 individuals. This represents a return rate of 2.0%--far less than that expected by some of the agricultural education professionals who assisted in the design of the poll, instrumentation, and analysis. Due to the low rate of return, only limited statistical treatment was made.

Report of Findings

The findings of the opinion poll were briefly reported in three issues of The Magazine. The September, 1982, issue contained a report on Part I; October contained Part II; and November contained Part III. The findings are also being reported by the Editor to the Editing-Managing Board, with emphases on those items which are particularly applicable to The Magazine.

FINDINGS

The findings are based on responses received from 251 individuals. Due to the small response rate, the findings are merely reported without interpretation. The respondents were not asked to identify themselves or where they lived. Using postmarks on the envelopes in which the opinionnaires were returned, it was determined that the responses were received from 42 states, as follows (the number in parentheses is the number received): Alabama (2), Alaska (1), Arizona (3), Arkansas (2), California (8), Colorado (1), Delaware (1), Florida (6), Georgia (5), Idaho (3), Illinois (16), Indiana (12), Iowa (16), Kansas (6), Kentucky (4), Maine (1), Maryland (5), Michigan (4), Minnesota (11), Mississippi (6), Missouri (16), Montana (4), Nebraska (8), New Jersey (1), New Mexico (1), New York (7), North Carolina (5), North Dakota (6), Ohio (15), Oklahoma (9), Oregon (2), Pennsylvania (8), Rhode Island (1), South Dakota (4), Tennessee (4), Texas (11), Vermont (1), Virginia (9), Washington (3), West Virginia (3), Wisconsin (4), and Wyoming (3).

Background of Respondents

The findings on the background of the respondents are summarized in this section.

Age

	N	%
30 years and younger	83	33.7
31-40 years	85	34.5
41-50 years	49	19.9
51-60 years	23	9.4
61 and older	6	2.5
	Total = 246	100.0

Sex

	N	%
Female	14	5.6
Male	234	94.4
	Total = 248	100.0

Race

	N	%
White	246	98.0
Nonwhite	5	2.0
Total =	251	100.0

Experience as a Vocational-Technical Agricultural Educator (All Positions)

	N	%
5 years or less	62	28.5
6-10 years	49	22.5
11-15 years	38	17.4
16-20 years	29	13.3
21-25 years	18	8.3
26-30 years	12	5.5
31-35 years	7	3.2
36 years or more	3	1.3
Total =	218	100.0

Position Titles

		N	%
Secondary teacher		165	67.4
Postsecondary teacher		9	3.6
Local supervisor		2	0.8
State supervisor		17	6.9
Teacher educator		42	17.3
Other:	Curriculum specialist	2	0.8
	Graduate student	2	0.8
	School administrator	2	0.8
	Adult instructor	2	0.8
	Industry training specialist	1	0.4
	Association executive	1	0.4
	Total =	245	100.0

Highest Level of Education

	N	%
Less than a baccalaureate degree	0	0
Baccalaureate degree	75	30.1
Masters degree	109	44.0
Educational specialist or certificate of advanced graduate study	21	8.5
Doctoral degree	43	17.4
Total =	248	100.0

Part I: Program Administration

This section presents findings on selected items related to program administration.

What Should be the Primary Mission of Vocational-Technical Agricultural Education at the High School Level?

	N	%
Preparation for:		
Employment in farming and ranching	8	3.1
Employment in agribusiness	9	3.6
Advanced study of agriculture at postsecondary level	6	2.4
Advanced study of agriculture at baccalaureate level	0	0
Employment in farming and ranching or agribusiness	54	21.5
Employment in farming and ranching or agribusiness or advanced study of agriculture at postsecondary level	43	17.2
Employment in farming and ranching or agribusiness or advanced study of agriculture at postsecondary or baccalaureate level	120	47.8
Other combinations	11	4.4
Total =	251	100.0

What Should Be the Primary Mission of Vocational-Technical Agricultural Education at the Postsecondary Level?

	N	%
Preparation for:		
Employment in farming and ranching	6	2.5
Employment in agribusiness	12	5.0
Advanced study of agriculture at the baccalaureate level	11	4.6
Employment in farming and ranching or agribusiness	93	38.6
Employment in farming and ranching or agribusiness or advanced study of agriculture at the baccalaureate level	115	47.7
Employment in agribusiness or advanced study of agriculture at the baccalaureate level	4	1.6
Total =	241	100.0

What Groups of Individuals Are to be Served by Vocational-Technical Agricultural Education?

	N	%
Students in grades K-12, postsecondary students, and adult students	27	10.7
Students in grades 7-12, postsecondary students, and adult students	49	19.5
Students in grades 9-12 and adult students	36	14.3
Students in grades 9-12, postsecondary students, and adult students	73	29.0
Students in grades 7-12 and adult students	12	4.8
Students in grades 9-12	13	5.2
Students in grades 9-12 and postsecondary students	13	5.2
Students in grades 7-12	7	2.8
Other combinations of students	21	8.5
Total	= 251	100.0

What Are the Major Problems Currently Facing Vocational-Technical Agricultural Educators?

(Note: Respondents could indicate as many problems as they wished and write in others.)

Funding for local programs		196
Excessive job demands on teachers		162
Providing supervised occupational experience		115
Lack of school administrator support		105
Shortage of teachers		98
Lack of student interest		67
Student Discipline		47
Others:	Teacher training	3
	Attack on 12-month programs	2
	Lack state staff support	1
	Poor Federal support	1

Which Department Location is Best for Vocational-Technical Agricultural Education at the Federal Level?

	N	%
U.S. Department of Agriculture	93	38.7
U.S. Department of Education	141	58.2
U.S. Department of Labor	3	1.1
Other	5	2.0
Total	= 242	100.0

Which Location of Agricultural Teacher Education Programs Is Best?

	All		Teacher Educators		State Supervisors	
	N	%	N	%	N	%
Colleges of Education	36	14.9	7	16.7	4	36.4
Colleges of Agriculture	206	85.1	35	83.3	7	63.6
Other	6	0	0	0	0	0
Total =	242	100.0	42	100.0	11	100.0

How Effective Is State-Level Supervision of Vocational-Technical Agricultural Education Programs?

	All		Teacher Educators		State Supervisors	
	N	%	N	%	N	%
Very effective	38	15.2	2	4.8	1	8.3
Effective	138	55.2	21	50.0	10	83.4
Ineffective	59	23.6	14	33.3	1	8.3
Very ineffective	15	6.0	5	11.9	0	0
Total =	250	100.0	42	100.0	12	100.0

How Adequate Is the Preparation Provided by Teacher Education?

	All		Teacher Educators		State Supervisors	
	N	%	N	%	N	%
Very adequate	21	8.4	4	9.6	1	8.3
Adequate	176	70.1	34	80.9	8	66.7
Inadequate	48	19.1	3	7.1	1	8.3
Very inadequate	6	2.4	1	2.4	2	16.7
Total =	251	100.0	42	100.0	12	100.0

How Adequate Are Teacher Certification Regulations?

	N	%
Very adequate	25	10.0
Adequate	175	69.7
Inadequate	43	17.1
Very inadequate	8	3.2
Total =	251	100.0

What Is the Best Location for Secondary Vocational-Technical Agriculture Programs?

	N	%
In comprehensive high schools	199	81.9
In area vocational centers	34	14.0
Both	10	4.1
Total =	243	100.0

Part II: Vocational-Technical Agriculture Curricula

This section presents findings on selected items related to curricula in vocational-technical agricultural education.

What Components Should Be Included in Secondary Vocational-Technical Agricultural Education Programs?

	N	%
Four Components: Classroom/laboratory instruction, supervised occupational experience, student organization activities, and adult/young adult education	176	70.1
Three Components: Classroom/laboratory instruction, supervised occupational experience, and student organization activities;	60	23.9
Classroom/laboratory instruction, student organization activities, and adult/young adult education	4	1.5
Two Components: Classroom/laboratory instruction and supervised occupational experience	6	2.5
Other: various single components	5	2.0
Total =	251	100.0

What Is the Place of Supervised Occupational Experience?

	N	%
Be required of all in-school students	203	82.2
Be optional for students who are interested	40	16.2
Not be a part of curricula	1	0.4
Other	3	1.2
Total =	247	100.0

What Kinds of Supervised Occupational Experience Can Be Used in Secondary Programs?

	N	%
Exploration, ownership, placement, and in-school laboratory	141	56.6
Ownership, placement, and in-school laboratory	35	14.1
Exploration, ownership, and placement	19	7.6
Ownership and placement	25	10.0
Ownership and in-school laboratory	5	2.0
Exploration and ownership	5	2.0
In-school laboratory only	4	1.6
Ownership only	4	1.6
Others	11	4.5
Total =	249	100.0

At What Levels Should Adult/Young Adult Instruction Be Offered?

	N	%
Secondary, postsecondary, and university levels	59	24.3
Secondary and postsecondary levels	68	28.0
Postsecondary and university levels	22	9.1
Secondary only	37	15.2
Postsecondary only	51	20.9
Other: Combinations in which the Cooperative Extension Service was mentioned	5	2.1
None	1	0.4
Total =	243	100.0

Should the Name of the Future Farmers of America (FFA) Be Changed?

	N	%
Agree	45	17.9
Disagree	198	78.8
No Opinion	8	3.3
Total =	251	100.0

Should FFA Membership Be Required of All Students
Enrolled in Secondary Vocational-Technical Agriculture Classes?

	N	%
Agree	170	68.3
Disagree	72	28.9
No Opinion	7	2.8
Total =	249	100.0

Part III: Professionalism

This section reports on the findings of selected items in the area of professionalism.

Who Are the Best Teachers?

The best teachers of vocational-technical agriculture are those who have:

	All		Teacher Educators		State Supervisors	
	N	%	N	%	N	%
Extensive industry experience, but no college degree	0	0	0	0	0	0
Extensive industry experience, with college degree	78	33.3	7	17.5	0	0
Completed a college degree in an approved agricultural teacher education program	140	59.9	32	80.0	13	100.0
Completed a college degree in some area of agriculture	7	3.0	1	2.5	0	0
Other						
Ag. Ed. degree and job experience	8	3.4	0	0	0	0
Other	1	.4	0	0	0	0
Total =	234	100.0	40	100.0	13	100.0

Were You Required to Take the
National Teachers Examination (NTE) in
Order to Teach?

	N	%
Yes	29	13.2
No	220	86.8
Total =	249	100.0

If You Took the NTE, How Effective do you think it is in assessing the ability of an individual to teach?

	N	%
Very effective	0	0
Effective	6	20.7
Ineffective	13	44.8
Very ineffective	10	34.5
Total =	29	100.0

In Which Organizations Do You Hold Memberships?

	N (N=251)	%
AVA (American Vocational Association)	211	80.1
NVATA (National Vocational Agriculture Teachers Association)	236	94.0
NEA (National Education Association)	110	43.8
AFT (American Federation of Teachers)	6	2.4
State vocational association	213	84.9
State vocational agriculture teachers association	237	94.4

How Effective Is the AVA in Meeting the Needs of Vocational-Technical Agricultural Educators?

	All		Teacher Educators		State Supervisors	
	N	%	N	%	N	%
Very effective	4	1.7	1	2.6	0	0
Effective	120	50.6	15	38.5	8	57.1
Ineffective	92	38.8	17	43.5	5	35.7
Very ineffective	21	8.9	6	15.4	1	7.2
Total =	237	100.0	39	100.0	14	100.0

How Effective Is the NVATA in Meeting the Needs of Vocational-Technical Agricultural Educators?

	All		Teacher Educators		State Supervisors	
	N	%	N	%	N	%
Very effective	36	14.8	3	7.5	3	23.1
Effective	163	67.1	29	72.5	9	69.2
Ineffective	35	14.4	8	20.0	1	7.7
Very ineffective	9	3.7	0	0	0	0
Total =	243	100.0	40	100.0	13	100.0

CONCLUSIONS

Due to a low rate of return, individuals who review the findings should draw their own conclusions. Several trends in vocational-technical agricultural education were apparent, however. Conclusions about these are briefly reported here.

1. Vocational-technical agricultural educators are younger adults who are less likely to devote a full lifetime career to the profession.
2. Vocational-technical agricultural educators do not agree on the mission of the program nor on the individuals who are to be served.
3. Vocational-technical agricultural educators have incongruent opinions about the administrative locations of individuals who are in leadership positions for the profession. (For example, the U.S. Department of Education is said to be the best administrative location for leaders at the federal level but colleges of agriculture are the best administrative location for teacher educators.)
4. Vocational-technical agricultural educators believe that the best location for secondary programs is in comprehensive high schools.
5. Secondary programs should have the components of supervised occupational experience and student organization activities in addition to classroom and laboratory instruction. Some will also include adult/young adult education.
6. The Future Farmers of America should remain much as it is now, with optional membership.
7. Agricultural teacher education is not viewed as favorably nor as essential to vocational-technical agricultural education as it should be viewed.
8. The NVATA is more effective than the AVA in meeting the needs of vocational-technical agricultural educators.

RECOMMENDATIONS

Several recommendations are listed below. Bases for them can be found in the findings of the opinion poll.

1. Attention needs to be given to the refinement of career ladders for vocational-technical agricultural educators. Ways need to be found to keep competent individuals in the profession.
2. Consideration is urgently needed to refine the mission of vocational-technical agricultural education. Leaders in the profession need to be more aggressive in promoting program

mission along with standards for programs. A national-level task force, comprised of progressive members of the profession (not of "good old boys") should be established to deal with this problem. (The notion that education is exclusively a function of local and state government is out of date. Our society functions much differently today than it did when the Constitution was adopted. A strong federal government presence in education is needed to provide curriculum leadership.)

3. A thrust to enhance professionalism is needed. Teachers, supervisors, and teacher educators need to collaborate in a massive effort of professional uplifting. A system for the professional accreditation of agricultural teacher education programs is much needed. Individuals of highest intellectual and ethical qualities should be recruited into the profession. Quality preservice and inservice experiences are needed to develop strong professional qualities.

4. A restructuring of professional organizations and the services provided is needed. The AVA needs to carefully consider how it can better serve vocational-technical agricultural educators. The NVATA needs to continually improve member services, one of which being the adoption of The Agricultural Education Magazine as a member service.

5. The value of holding an opinion poll through The Magazine is questionable. It is doubtful if the poll should be repeated any time soon. If it is, a mechanism needs to be found for increased participation by vocational-technical agricultural educators.

6. A program to enhance professional pride, awareness, and excellence is needed. Such a program must depict vocational-technical agricultural educators as competent, literate individuals. The professional awareness program must reward those who excel as professionals. It should also teach those qualities needed by members in the profession.